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ABSTRACT

Information on the senior year at Northwestern University, Illinois, and suggestions for providing focus to the last year of undergraduate study are presented, based on a needs assessment conducted by the Curricular Policies Committee of the College of Arts and Sciences (CAS). Department heads and other staff were contacted to obtain a profile of current practice, and a survey of transcripts was undertaken to determine actual student patterns in the senior year. In addition, catalogs from other colleges were evaluated to provide a profile of existing practice. Information is presented on placement patterns of graduates of the CAS, and enrollment patterns and requirements of senior-year honors programs and specific programs/majors at the bachelors- and masters-degree levels. Additional focal areas include: grade point average (GPA) in the senior year, GPA in major field, double majors, enrollment in optional courses outside the senior's division, college requirements, organization of the senior academic year, the effect of advanced placement and transfer credits on senior year patterns, and student characteristics. Finally, a number of curricular options are discussed. A booklet, "The Senior Year," is attached that describes capstone courses, linkage seminars, and other opportunities for scientific and scholarly research available within the CAS. (SW)

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REPORT

ON

THE SENIOR YEAR

IN THE COLLEGE OF ARTS AND SCIENCES

(Northwestern University)

May 1981

by

The CAS

Curricular Policies Committee

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PREFACE

The CAS Curricular Policies Committee (CPC) is a small (nine member) working committee, consisting of two faculty representatives from each of three divisions (sciences, social sciences, humanities), two student respresentatives, and an associate dean (ex-officio). Its purpose is to propose and evaluate general curricular policies in the college (including creation and/or termination of all major programs, degree requirements, credit, grading) and to coordinate with other college committees charged with specific requirements and academic programs.

During its first two years (1979-81), the Curricular Policies Committee has developed substantive legislation, approved by the CAS Faculty, to establish (1) a Humanities Program Major, (2) a Certificate in Women's Studies, (3) a five year Bachelor of Music/Bachelor of Arts degree program (4) a CAS major in Drama. On the procedural side, the CPC has recommended policy in such areas as (5) intermediate grading, (6) the timing of the P/N option (7) small class size guidelines and (8) guidelines for field studies and internships. On the "coordination" side, the CPC has maintained direct contact with the new Curricular Review Committee (CRC), and the Distributions Requirement Committee (DRC). Current issues under review include requirements for a possible major in African-American studies and the likelihood of major requirements in the new departments of the life sciences.

The "agenda" of the CPC may be initiated by interested groups within the college (or the university as a whole). Other issues may be generated by the committee itself, as it views overall developments in the college, or as it perceives a series of disparate curricular-related matters which may be drawn together in a more creative way.

The issue of "the senior year" has come to our attention partly through outside suggestions within the college, and partly as a result of our own projection of the impact of new developments in the college. Since "the senior year" constitutes one-quarter of the entire educational experience at the college level, it is a massive topic. The senior year is also a culmination of the freshman/sophomore/junior years, and cannot be evaluated in isolation.

In November 1979, the CPC decided to constitute itself as a committee-of-the-whole to explore possible curricular policies which might enhance the educational quality of the senior year. We saw our task as falling into three main categories: 1) assessing the current situation; 2) assessing "the competition," i.e. senior year

programs in other colleges and universities; 3) generating ideas/options which might be suitable for future CAS policy. We estimated that this task would probably take about two years.

Because of the complexity of the subject, the need for a solid information base, and the desirability of getting inputs from a variety of sources, we have tired to identify stages of inquiry and specific sources of information. Because of the centrality of the departments in the senior year, our first step was to contact all department chairpersons to try to get a profile of current practice. Second, we perceived that there was a good deal of confusion over the actual definition of "senior," but that actual student patterns in the "senior year" were probably contained somewhere in the maze of data available on student transcripts at the Registrar's Office. We contacted the Registrar, and initiated a full-scale transcript survey. Third, we contacted a number of persons on campus who have some special experience or relationship with the senior year. In particular, we talked with the Associate Dean, Office of Studies, and have re-analyzed data on graduating seniors provided by the Dean of Students. Fourth, we collected catalogs from other colleges and universities with senior year programs, to give us a profile of existing practice in American higher education. Fifth, we began to generate our own ideas about what is needed.

The following report is an attempt to tie these data and ideas together into a cohesive set of options for students in their senior year. We have not tried supercede the centrality of the departments in our schema, but rather to suggest programs which will maximize the opportunities for students to synthesize and/or research areas of knowledge which transcend the normal offerings of the departments.

I. Rationale for Studing the Senior Year

1. THE "SHAPE" OF AN UNDERGRADUATE EDUCATION

It might be helpful in our consideration of the Senior Year to think about the "shape" of an undergraduate education. That is, thinking about ideal shapes or models for an undergraduate career may help us clarify the role of the senior year in a student's total curriculum.

There are a number of possible "shapes" an undergraduate education may take:

--The Pyramid: This is the standard shape for an undergraduate education--broad in the first two years, narrow in the last year or two. According to this model, which is the one currently legislated in the CAS, a student begins his/her career with general education courses--foreign language, freshman seminars, and distribution requirements. By the end of the sophomore year, the student chooses a major; thereafter, the student specializes in a major (including related courses). This specialization largely occupies the student's junior and senior years. An honors program within a major is a special type of this model. Most honors programs require one or more quarter-courses during the senior year, and thereby specify a particular "senior experience". Further, in some departments--for example, English--there are special courses in the senior year for all majors. These are simply parts of a sequence of required courses for majors, and do not constitute a qualitatively different senior experience. In many departments there is no distinction at all for non-honors students between the kinds of courses taken in the senior as opposed to the junior or sophomore years.

--The Inverted Pyramid: This is the model advocated in the "Hagstrum Report" of 1968-69. Here the idea is that students begin with a narrow focus on a particular discipline in the first couple of years, and branch out in the senior year. The argument for this model is that educational breadth--in the sense of interdisciplinary work--is best attempted only after mastery of a discipline has been achieved. Interdisciplinary exploration

is based on solid competency over a conventional subject. According to this model, the senior year would be quite different from what went before, in that special interdisciplinary courses or projects would be undertaken. General education would be done at the end rather than at the beginning of an undergraduate career.

--The Hour-Glass: According to this "shape", the undergraduate career would begin with broad general education requirements, then would narrow in the second and third years with concentration on the major, and finally broaden again with interdisciplinary work in the senior year. Perhaps this final broadening phase could deal directly with applications of the analytical skills that students gain in their majors to general problems and issues they will face as citizens rather than as specialists. According to this shape, general education comes at both the beginning and the end of an undergraduate career. Ideally, the Hour-Glass Shape would combine the virtues of both the Pyramid and the Inverted Pyramid models. The general education requirements completed in the first two years would serve to expose the student to a wide variety of subjects so that the student can make an intelligent choice of a major and a career. The major, then, gives a competency within a discipline, while the final broadening phase would stimulate the student to apply the competency to a broad range of problems and issues as well as to bridge the gap between disciplines.

--Combinations: The most desireable option or model for any particular undergraduate or department might vary. It may be that within the college as a whole there may be a predominant model, but with important clusters of alternative models. Part of the purpose of the Curricular Policies Committee evaluation of the senior year, is to see each year in relationship to an overall pattern. The senior year is the culmination of a total undergraduate experience. We are concerned to assess the curricular implications of particular models of undergraduate education which may be emerging in the College of Arts and Sciences

2. THE DEFINITION OF "SENIOR"

The definition of a "senior" is contained in the Northwestern University Bulletin, Undergraduate Study 1980-81,

Classification of Students

Students are classified as follows:

1. *Senior:* a student who has completed at least 33 quarter courses.
2. *Junior:* a student who has completed at least 22 but fewer than 33 quarter courses. (Co-op students in the Technological Institute are considered pre-seniors when they have completed 32 quarter courses, and seniors when they have completed 40 quarter courses.)
3. *Sophomore:* a student who has completed at least 11 but fewer than 22 quarter courses.
4. *Freshman:* a student who has completed fewer than 11 quarter courses.

The current situation, whereby "senior status" is defined by the number of quarter courses (33), and "graduation" is defined as having met all requirements and completing 45 quarter courses, results in a staggered pattern of finishing the undergraduate degree at Northwestern. About 25% of the "graduating seniors" in June each year have actually completed all requirements earlier, i.e. in December or March. In short, only about 75% of the students have a senior year which is coterminous with the academic calendar (September-June).

This definition of "senior' may require revision when the new Term Pricing policies which went into effect for 1980-81 freshmen, result in new patterns for the 1983-84 seniors. According to the Northwestern University Bulletin, (ibid. p. 19), the graduation requirement will be "12 regular academic year quarters..." Thus, in the future, a "senior" may be operationalized as someone who has completed nine full quarters. (This would probably require a recommendation by the CPC to the CAS faculty, at the time.) The new policy sets minimum (3) and maximum (6) numbers of courses per quarter (without financial penality). This means that a graduating senior could have considerably more than the current 45 units.

will be preparing for 12 terms - will complete 9 in Senior year to seniors

3. PROJECTED IMPACT OF TERM PRICING:

At the CPC meeting of December 6, 1979, Associate Dean John Margolis discussed the possible impact of Term Pricing on patterns of undergraduate education. He stressed that fewer students would graduate early. Although a student can take as many courses as s/he wants, the student may pay for 12 terms at Northwestern. Thus, in future, a "senior year" (September to June) will be more of a reality, and students may find they have increased flexibility in their final year, with regard to course selection. Hence, it may be appropriate to consider a wider range of options than is presently available for seniors who have met departmental and college requirements, but can't "graduate" until June.

4. THE LOGIC OF A FULL CURRICULAR CYCLE.

At present, the College has programs which are geared, essentially, to the freshman/sophomore levels, including Freshman Seminars, Programs on Writing, foreign language requirement, and distribution requirements (which are almost entirely A and B level courses). At the same time, there has been a dramatic increase in the number of programs geared to juniors, especially in the off-campus/field study/junior year abroad areas. At present, the senior year is regarded as the purview of the departments, and very little is done at the college level to enhance programs for seniors.

In his remarks to the faculty, September 18, 1979, Dean Weingartner called attention to several remaining "curricular problems." "First, if we are to be assured that the undergraduate education offered by the College actually culminates during the fourth year (and does not just peter out), the senior year merits a close look... (Also) the various honors programs in the College should be reviewed and their appropriateness, as honors programs, examined. Indeed, we could use a general policy, informed by some reflection, regarding any CAS honors program; the College itself is already quite selective."

In short, rather than assume that the senior year is adequately covered at present by departmental programs (including honors programs), it seems appropriate to examine the question of possible college-wide programs.

5. PROJECTED IMPACT OF RESIDENTIAL COLLEGES.

In October, 1979, the Associate Dean of Students (Tom Lifka) directed the attention of the CPC to possible opportunities for enhancing undergraduate academic experiences by means of incorporating academic programs in the new residential dorms, including special work with seniors. Thematic colleges (such as International Studies), may be in a special position to utilize seniors (especially those returned from junior year abroad) in working with freshmen and sophomores.

Dean Lifka has proposed a Tutorial Program, in the residential units, with Graduate Teaching Fellows as Tutors (see Appendix -). One model for this program may be Harvard, where resident graduate fellows direct much of the senior thesis requirement, and also provide general tutorial guidance for students at the sophomore, junior, and senior levels. Dean Lifka has asked the Curricular Policies Committee to consider the use of graduate senior tutors for Curricular purposes in the new dorms.

6. CAREER CHOICES/STRATEGIES IN THE SENIOR YEAR.

The Office of the Dean of Students, Guidance and Counseling, has surveyed graduating seniors since 1976, with regard to their post graduation plans. Although much of the aggregated data from the survey of 1979 deals with university-wide patterns, detailed information by departmental major for the College is available for secondary analysis. The implications for senior year programs may be considerable. Several patterns are illustrative:

(1) There is a strong tendency for students to go on to graduate or professional school, and about one quarter of these students actually continue on at Northwestern University; (2) a significant percentage of CAS students graduate with "double majors" (i.e. about 10%); (3) there is considerable disparity in the number of CAS graduating seniors, by department (ranging from 1 to 129), but there are more variations on the relationship to career choice and departmental major than is generally supposed; (4) there were more CAS graduates with an "Ad Hoc" major than graduates in each of eight other CAS departments. In short, we may know less about

career choice patterns and strategies of graduate seniors than we ought to know, considering the information available. While there is a widely advertised trend toward "careerism" among college students, the impact of such a trend on the academic programs of seniors is not known, and in particular, the extent to which seniors have devised combinations of programs (including double majors and ad hoc majors) to meet these pressures is not well understood. A projection of these patterns may have considerable implications for CAS curricular policy.

7. PROJECTED IMPACT OF PRE-PROFESSIONAL TRAINING AT SENIOR LEVEL.

At present, about seventeen departments or programs in CAS have a combined BA/MA program, in which "seniors" are admitted to undertake a graduate course leading to the MA degree, during their "Fourth" year. In addition, the strong graduate level resources within many of the CAS departments often provide incentives for more professionally focused seniors to undertake research projects and supervision similar to the in-depth training available at the graduate level. While such opportunities are clearly important to a segment of the senior class, it seems appropriate to consider alternative models as well, and indeed, to evaluate whether the stress on pre-professional training in the senior year may be at the expense of other curricular options. Finally, in those cases where pre-professional training may be appropriate, it is not clear that the resources (including intellectual and material) for the highest quality work are available. We anticipate that financial pressures (including term pricing) plus the trend toward professionalism will greatly enhance the attractiveness of early specialization to many students. The line between "graduate" and "undergraduate" is increasingly blurred. We would like to consider the educational implications of this trend, and possible alternatives.

8. WHAT'S HAPPENING WITH THE DEPARTMENTAL HONORS PROGRAMS?

While the "honors" programs in many of the departments do not necessarily entail graduate-type research projects, there is no clear picture at present as to what they do include. Furthermore, in those cases where honors programs are geared to breadth, rather than depth, it may well be that cross-departmental and even college-wide honors options should be developed.

9. PROJECTED IMPACT OF RECENT INTERDISCIPLINARY CURRICULAR PROGRAMS.

In the past five years, a number of new curricular developments have occurred in the college. These programs, especially the interdisciplinary programs (e.g. Integrated Science Program, Mathematical Methods in the Social Sciences, Humanities Program), the topical programs (e.g. Women's Studies, areas studies), and the off-campus programs (especially the U.S. field studies, and the junior year abroad programs) are probably creating new types of curricular concern and opportunity at the senior level. In some cases (e.g. Women's Studies) the program is evaluating its own impact; in other cases (e.g. Junior year abroad), there has been little attention to the impact. In any case, most of the CAS legislation creating these programs calls for evaluation of each program (after about three years), usually by the Curricular Policies Committee.

In short, there is both a mandated and an intrinsic reason for evaluating these programs. There is also a reason for viewing such programs as part of a larger picture, which is emerging into a new set of curricular options at the senior year for those engaged in the programs. Also, we feel that the six distribution requirement areas may well take on an intellectual life of their own, and there may be reason to consider a senior year "capstone" course in each of these six areas.

10. INTERNATIONAL PROGRAMS AND STUDY ABROAD.

Approximately 50 students each year (mainly from CAS) now engage in some junior year abroad program. In addition, the Richter scholarships allow for one to two quarters of independent study abroad for a significant number of students. The impact of these programs, which have all been developed in the past five years, has not been assessed from a curricular point of view. In particular, there seem to be numerous structural (and curricular) stresses upon reentry under the present system (including registration for courses), apart from the possible impact of re-entry on shifts in intellectual or professional horizons.

One characteristic of the junior year abroad programs at present is that they have been attached primarily to institutions in Europe (England, France, Germany, Spain, Italy) plus Russia and Israel. Partly as a result of the CAS faculty discussion in 1978/79 on a proposed "non-western" studies requirement (which

was not approved) there seemed to be general awareness and recognition by the CAS faculty of the importance of developing options for exposure and analysis of "non-western (whatever the definition) civilizations and cultures. In September 1980, Northwestern Undergraduates were among the first in the nation to participate in educational exchanges with the Peoples' Republic of China. Similar opportunities could be developed, no doubt, in Africa (where Northwestern has long established academic links), in the Islamic world, and in Japan, India, etc.

International studies are receiving increased attention at the national level, and there may be opportunities for curricular enhancement in this area. The current Faculty Planning Committee at Northwestern is examining international resources at NU in its 1980-81 report and we will try to co-ordinate with that committee.

For those "high-achieving" seniors (about 50 each year mainly from CAS) who choose to compete for post-graduate overseas fellowships such as the Rhodes, Marshall, or Luce, there may be curricular implications to the exploration of options. The Fellowship Selection Committee, which evaluates these applications and conducts interviews with the students, may have suggestions as to curricular "gaps", particularly in the synthesis of knowledge and values.

11. POSSIBLE CURRICULAR LINKAGES BETWEEN CAS AND OTHER NU SCHOOLS

There has been considerable discussion about the restrictions on CAS students, including seniors, in taking courses in other Northwestern schools, especially in Speech, Music, Journalism. There ought to be opportunities for CAS seniors, in particular, to register in courses outside CAS. These courses may be career exploratory, music or drama related, or otherwise enriching to the student. The negotiations between schools (e.g., for a priority system for senior registration) will be of interest to the CPC. The recent precedent, of a CAS major in Drama, requires close cooperation with the School of Speech. This may be a model for other collaborative efforts (within a four year framework).

12. STUDENT AND ALUMNI PERCEPTION OF NEED.

There has been widespread expression of concern by NU students, over the past few years, about the pressures and competition of college life. Often this concern focuses on a specific procedural issue (such as intermediate grades) which may or may not contribute toward a pressure-cooker atmosphere on campus. (The student newspaper is filled with references to the library being, ironically, the center of "social life" on campus.) This pressure is often felt keenly in the senior year when competition for post-graduate opportunities (jobs, professional school admission, etc.) is most evident.

By ignoring the impact of cumulative curricular policy on the senior students, the college may be losing an opportunity to mediate some of the dysfunctional aspects of senior year pressure, and may be jeopardizing the idea of liberal education as a broadening experience. Narrow vocational colleges exist in abundance, and expensive private liberal arts colleges may have to be more creative in their offerings, especially at the senior level, to avoid general disillusionment. Needless to say, most seniors become alumni, and disillusioned alumni are hardly a good portent for the health of the college.

Considerable effort is currently being expended to develop an intellectual linkage with CAS alumni. (See, for example, Arts and Sciences, Magazine of the College of Arts and Sciences, Northwestern University.) Yet the crucial mooring for such linkage is probably the senior year. The CPC would like to acquire student and alumni input as to how the senior year can become a more intellectually challenging and relevant experience. Indeed, the CPC with its student representatives would seem to be an appropriate conduit for a variety of curricular-related suggestions, stemming from the perceived needs of students.

In relation to student perception of curricular needs, the CPC will try to be sensitive to some of the newer trends in the composition of the CAS student body. For example, the Northwestern Program on Women has made available to the CPC a number of their studies on older women returning for BA degrees.* It may be that particular target groups within the student body will have special curricular needs.

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* See for example, Karen Fox, Attracting a New Market to Northwestern's Undergraduate Programs: Older Women Living on the North Shore, May 1979, mimeo. Yvonne Johns, A Survey of Older Women as Candidates for Re-Entry at Northwestern University, Oct. 1979, mimeo. Arlene Kaplan Daniels, Welcome and Neglect: The Ambiguous Reception of Re-Entry Women at a Private, Elite University, Nov. 1979, mimeo. Esther Beniamin and Judith Levy, Barriers to Educational Opportunities

II. The Feasibility of Considering New Senior Year Options

1. THE ISSUE OF OPTIONS VS. REQUIREMENTS

In our preliminary discussions on the senior year, we noticed a diversity of opinion over the question of whether any senior year program (s) ought to be required, as opposed to being optional. Those who argue for a requirement suggest that: (1) it may be possible to identify a crucial area of curricular experience which should be required of all students- (not necessarily a substantive topic, but perhaps a research experience or a synthesizing experience); (2) that a range of options might be developed, which go beyond the departmental options, from which a student might be required to select one.

On the other hand, it is argued that the number of requirements in the College is already high, and that providing attractive options could achieve the same end. (One interpretation of the debate over the proposed "non-western" requirement, in spring 1979, over and above the 12 distribution requirements, is that the faculty were suspicious of any further requirements which might complicate the schedules of their students.) Indeed, it is argued, the "freedom to choose" (and to live with the consequences of choice) is as much a part of a "liberal" education as the actual menu of courses.

At the initial stage in our inquiry, we deferred judgement as to whether a required or an optional program would be most suitable. In our discussion of new ideas, however, we referred to them as "options."

2. THE PROBLEM OF LIMITED RESOURCES AND FEASIBILITY.

It is not the function of the CPC to be overly concerned with the resource base for new programs or proposals, but rather to focus on the educational aspects of such programs. However, we are aware of two counterveiling trends which have already affected the nature of our discussions: (1) the tight resource situation within the university; (2) the high success rate that quality new programs have had in attracting outside funding. The initial response from many of the departments we contacted, and even from within our own committee,

was that the teaching resources necessary for any new curriculum developments at the senior year level were simply not likely to be available. On the other hand, we have been encouraged by the funding available for specific CAS programs, the evidence of federal funding opportunities in the field of international education, and the possibility of other outside resources. More central, however, is the argument that if we do not improve the quality of the entire undergraduate experience (including senior year) we will see an erosion of the financial underpinnings of the college, i.e. student tuition and alumni support.

We have conducted our study of the senior year without being unduly influenced by the financial implications of various options. At some point, no doubt, these issues will need to be addressed, but at present we are concerned with designing curricular options for students in such a way as to be adaptive to the needs of students, and faculty, in a rapidly changing educational context.

3. THE FACULTY PLANNING COMMITTEE REPORT (1980).

The Faculty Planning Committee (Northwestern University), presented a report in May 1980, on "Strategies for Excellence". A major recommendation was that the College of Arts and Sciences be strengthened, to give distinction to the University as a whole. In short, although the professional schools may be strong, the national and international reputation of a University is often a reflection of its core college.

Because the primary unit of evaluation in the FPC report was the "department", which tends to undervalue the distinction of individual scholars and/or inter-disciplinary centers, the possibility of a cumulative, or interdisciplinary excellence was not dealt with directly. Yet the encouragement of "clusters" of departments, such as "policy science" or "life science" suggests some mechanism of interdisciplinary cooperation.

In short, a creative deployment of resources within the university, might include further strengthening of many departments in CAS. It might also suggest that the smaller departments be strenghtened if they can develop broader based/multidisciplinary research and teaching combinations, in addition to their focused work within their disciplines.

III. Assessment of CAS Graduate Placement Patterns

The surveys by the Dean of Students regarding post graduation plans (of seniors) provides a basic insight into the career choice patterns of senior CAS students. We have recalculated the data for the class of 1979 by major within CAS, and the results are shown in Table 1. The summary figures by career choice for CAS are as follows:

Table 1

Post Graduation Plans of CAS Seniors, 1979

60% ⇒ prof. training

law school	16%
medical school	17%
medical sciences	2%
management	7%
law & grad. school	1%
graduate school (in major field)	14%
graduate school (in new field)	3%
employment	31%
other	8%
total:	99% (n = 446)

Thus, about 39% of those responding with definite career choices are going into employment/other fields, and about 60% are going on to professional schools. There is some difference between men and women on this basic pattern (men =25%, women = 39% going into employment).

With regard to departmental patterns, we have not conducted any specific analysis. Clearly some departments are focused in their career tracks, in that a high percentage of their majors go into specific professional directions (e.g. biology). Other departments aremore diverse in their career options. But it is not necessarily the case, however, that particular career tracks

attract students from only the "obvious" departments. Thus, medical schools draw not only from Biology, Chemistry and Biochemistry, but also from Psychology, Political Science, Philosophy, Mathematics, History, English, and Anthropology.

1. Double Majors and Placement – have major difficulties

Since double majors (including one triple major) constitute about 10% of the graduating class (73 out of 721), a closer look at this category seems advisable. At first glance, several patterns are clear: (1) almost all departments and major programs are involved (29 in all); (2) several departments are more centrally involved, e.g. Economics (18), History (15), Political Science (9); (3) there is little cross-linkage between CAS and other schools (1 in Education); (4) there are a number of non-departmental programs included as double majors (e.g. Urban Studies, Women's Studies, American Culture) although the percent of such majors (about 11 percent) is less than those doing double majors in departments. Fuller details are contained in Table 2.

Table 2

CAS Double Majors: Breakdown by major

Majors	Total			Graduate Schools			Employment			Other		
	F	M	T	F	M	T	F	M	T	F	M	T
American Culture	1	2	3	1	2	3						
Anthropology	3	2	5	2	1	3	1	1	2			
Art History	1	2	3	1	2	3						
Biochemistry	1	4	5	1	3	4		1	1			
Biology	2	5	7		5	5				2		2
Chemistry	1	1	2	1	1	2						
Computer Studies	2	2	4				2	2	4			
Economics	6	12	18	3	9	12	2	2	4	1	1	2
Education	1	0	1				1		1			
English	4	2	6	2	2	4	1		1	1		1
French	0	2	2		1	1					1	1
Geography	0	1	1		1	1						
Geology	1	1	2	1	1	2						
German	1	1	2		1	1	1		1			
German Lit	1	0	1	1		1						
History	8	7	15	4	6	10	3	1	4	1		1
Int. Arch	1	0	1				1		1			
Linguistics	0	1	1		1	1						
Lit. of Religions	1	1	2	1		1		1	1			
Math	2	6	8		4	4	2	2	4			
Molecular Biology	0	3	3		2	2		1	1			
Philosophy	0	3	3		2	2		1	1			
Physics	0	2	2		2	2						
Political Science	4	5	9	1	4	5	2	1	3	1		1
Psychology	1	4	5		2	2	1	1	2		1	1
Sociology	3	2	5	3	1	4		1	1			
Spanish	0	2	2					1	1		1	1
Urban Studies	3	5	8	2	3	5	1	2	3			
Women's Studies	1	0	1	1		1						
TOTAL	49	78	127	25	56	81	18	18	36	6	4	10

24 women (one triple major)
39 men

Table 3 : CAS Candidates for Graduation, 1979 --
(Source: Office of the Dean of Students, NU.
Survey of Graduating Class of 1979. mimeo.

	Majors in College of Arts and Sciences	Grads	Returns	Percent	Law School F	M	T
1	Ad Hoc	6	2	33.3			
2	American Culture	12	8	66.7		2	2
3	Anthropology	20	14	70.0	1		1
4	Art and Art History *	21	12	57.1	1		1
5	Astronomy	1	1	100.0			
6	Biochemistry	9	9	100.0			
7	Biology	68	57	83.8			
8	Chemistry	26	19	73.1			
9	Classics	1	0	0.0			
10	Computer Studies	12	10	83.3			
11	Double Major	73	69	94.5	5	8	13
12	Economics	129	90	69.8	2	17	19
13	English	66	47	71.2	2	6	8
14	Foreign Languages **	20	15	75.0			
15	Geography	3	2	66.7			
16	Geology	4	3	75.0	1		1
17	History	50	22	44.0	4		4
18	History & Lit of Rel.	4	3	75.0			
19	Integrated Science	4	2	50.0			
20	Linguistics	5	5	100.0		1	1
21	Mathematics	16	10	62.5			
22	Philosophy	20	8	40.0	1		1
23	Physics	4	4	100.0			
24	Political Science	72	44	61.1	5	11	16
25	Psychology	64	38	59.4	4	1	5
26	Sociology	11	7	63.6		1	
	TOTAL	721	501	69.5	26	47	73

* Art department and Art History department combined
** Departments of French, Spanish, Portuguese, German, Italian, and Slavic Languages Combined

F = Female
M = Male

Post Graduate Patterns

Post Graduate Plans:

1979)

Table __ (Continued)

Medical School			(Medical Sciences		
F	M	T	F	M	T
	2	2			
2	3	5			
5	32	37	3	4	7
2	7	9		1	1
1	6	7		1	1
1		1			
	2	2			
	1	1			
	1	1			
	1	1			
1	1	2			
4	4	8			
16	60	76	3	6	9

includes dentistry, nursing, medical technitian

Management			Law + Grad School			Grad School Old Field			Grad School New Field			Employment			Other ***			Total Responses			No Response to ??	TOTAL
F	M	T	F	M	T	F	M	T	F	M	T	F	M	T	F	M	T	F	M	T		
						1		1							1		1	2	0	2	0	2
						1		1				2	2	4		1	1	3	5	8	0	8
			1		1	2		2	1		1	4	1	5		1	1	9	4	13	1	14
						3		3				3	1	4				7	1	8	4	12
																		0	0	0	1	1
						1		1		1	1		1	1				3	5	8	1	9
	1	1				1	4	5				1	4	5	1	1	2	11	46	57	0	57
						1	1	2		1	1	1	1	2	1		1	5	11	16	3	19
																		0	0	0	0	0
							1	1				2	5	7				2	6	8	2	10
1	2	3		2	2	5	8	13		1	1	9	9	18	3	2	5	24	39	63	6	69
4	12	16	1	1	2	1		1	3		3	12	19	31	14	2	16	37	51	88	2	90
1	1	2				2	5	7	4		4	11	4	15	1	1	2	22	17	39	8	47
	3	3				2	1	3				5	2	7				7	6	13	2	15
																1	1	0	1	1	1	2
						2		2										3	0	3	0	3
	4	4				1		1				3	3	6		1	1	8	10	18	4	22
							1	1				1	1	2				1	2	3	0	3
																		0	1	1	1	2
												2	1	3				2	2	4	1	5
							1	1				4	3	7				4	5	9	1	10
							1	1					1	1	1		1	2	3	5	3	8
							4	4										0	4	4	0	4
	3	3					2	2		1	1	6	6	12		1	1	12	25	37	7	44
	2	2				4	4	8	1	1	2	3	3	6		2	2	16	17	33	5	38
						1	1	2				2		2				3	2	5	2	7
6	28	34	2	3	5	28	34	62	9	5	14	71	67	138	22	13	35	183	263	446	55	501

*** Other category includes: taking time off to travel, geographic relocation, working in short-term positions, plans uncertain, part time work/part time school.

IV. Assessment of CAS Senior Year Honors and Other Programs

1. DEPARTMENTAL HONORS AND BA/MA PROGRAMS

Enclosed is a summary table of departments, number of seniors, BA/MA programs, honors programs, other senior research, and number of seniors receiving honors. This information was obtained by direct conversation with the departmental assistants in each department, and hence it probably represents a fairly accurate picture. About 108 seniors out of a total of 800 are involved in some sort of senior honors program. This represents about 13.5 percent. We are interested in both the quality of the existing senior programs and in the fact that the majority of seniors arenot involved in such programs. Furthermore, only about half of the departments are actually offering programs open to senior honors students.

A more important problem here is that fewer than one-third of the departments described their honors programs in the catalog. Hence we have the unusual situation of a wealth of senior honors programs that are not described anywhere. The existing senior year programs are clearly handled by the departments and are probably of uneven quality. There are a wide variety of practices involved, ranging from the establishement of special senior honors seminars to providing access of qualifying seniors to D-level courses.

Since our other analysis indicates that up to ten percent of the graduating seniors are undertaking double majors and there is a significant number of ad hoc majors each year, it is clear that leaving senior honors entirely in the hands of the individual departments might be missing some of the needs of students who areinterested in linkage and inter-departmental types of activities. Furthermore, when college honors are conferred at graduation, these honors are recommended by individual departments, although the college does have certain requirements for college honors, such as two C98 courses, for example, a 3.3 average in the major, and the specification that the senior be involved in either "research" or "integrative work." At present we have nothing that could pass for an integrated work although it seems that many of the departments are emphasizing various types of research. It would appear that college honors are simply an extension departmental honors.

With regard to the BA/MA program in the fourth year, the following patterns seem to have emerged. During 1980-81 we will have 16 BA/MA graduating seniors who are drawn from about ten departments. Other departments have the program on their books, but apparently this year at least most departments have had no students involved in the program. Technically, students should be in the upper two percent of their class, must be admitted by the Graduate School, and have no more than three quarters of non-Northwestern work. The Graduate School has a list of about 25 students who have applied for the program over the past several years, but this is not a exhaustivelist and it does not indicate which were actually accepted. In short, at present the question of keeping accurate statistics on the BA/MA program seems to have fallen between the undergraduate schools and the graduate schools, and to our knowledge no such summary of statistics is available at the present.

There is an additional problem with the BA/MA program in that D-level senior year grades often cannot be applied to other graduate schools for credit. In short the BA/MA course grades count as part of the undergraduate program. Thus, it might seem to bemore of a terminal degree for students who are not going for academic professional work in their departmental areas. It may be that students continuing at Northwestern can petition for reduction of residency requirements but it is not clear how this will be evaluated.

We clearly need to know more about the workings of the BA/MA programs. Some programs are working well. One possibility with term-pricing is that more students will want to take advantage of this program since they will have to spend the extra time here in any case. This should probably be encouraged, since contributions to such students can be made in the coming years.

1979-1980

CAS DEPARTMENTS: SENIOR PROGRAMS

Dept.	Number of Seniors	MA/BA MS/BS	HONORS		Other Senior Research	# Ser Recei Hor
			Honor Seminars	# Snrs. Enrol.		
AFRAM	57 *	No	No		Not a Major	
ANTH	14	Yes/1	No		C90 Sem. for Some Stdts; Hons. by Grades or Res.	
ART	5	No	No		Hons. by Indep. Study & Grades	
ARTH	10	No	Yes/ 2 Qtrs.	2		
BMB	44	Yes/0	No		Hons. Res. Program Indep. Study - 8	
BIOL	67	Yes/6	Yes/ 1 Qtr.	3		
CHEM	44	Yes/2	Yes/ 1-3 Qtrs	0	C99 Indep. Res.: Abt 10 per quarter	
CLAS	1	Yes/0	Yes in Grk & Lat	0		
ECON	137	Yes/0	Yes/ 2 Qtrs.	11	Hons. also thru C99	
ENG	48	Yes/1	Yes/ 3 Qtrs.	8		
FRIT	12	Yes/1	Yes/ FRIT	0	Hons. also thru C99, including thesis	
GEOG	6	No	Yes	0		
GEOL	5	Yes/0	Yes	0		
GERM	3	Yes/1	Yes	0	Hons. also thru C99	
HIST	72	No	Yes/ 3 Qtrs.	11	Hons. also thru C99	
HLR	7	No	Yes/ 3 Qtrs.	5		
LING	5	No	Yes/ 1 Qtr.	5		
MATH	25	Yes/1	Yes/ 3 Qtrs.	0	Hons. also by C99- this year 3	
PHIL	17	No	Yes/ 3 Qtrs.	6		
PHYX & AS	17	Yes/0	Yes/ 3 Qtrs.	0	C99 also avail.- Abt. 4 per qtr. this year	
POLS	83	Yes/2	Yes/ 2 Qtrs.	2	Field Study Programs	

Dept.	Number of Seniors	MA/BA MS/BS	HONORS		Other Senior Research	# Se Rece Ho
			Honor Seminars	# Snrs. Enrol.		
PSYC	43	No	Yes/ 3 Qtrs.	4		
SLAV	4	Yes/0	No		Honors done thru C99 - 2 this year	
SOC	12	No	Yes/ 2 Qtrs.	7	Only one Qtr. of C98 given this year	
SPPO	6	Yes/1	Yes/ 3 Qtrs	0	Honors also thru C99 (one student)	
AMCU	8	No	Yes	8	Amer. Cult. is an Honors Program	
CMLIT	2	Yes/2	Yes	0		
CMPSTU	9	No	No		Co-op Program: Takes 1 extra year	
INSC	13	No	Yes	12	ISP is an Honors Program	
MMSS	0	No	Yes	14	MMSS is an Honors Program	
POAL	10 *	No	No			
URBST	14	No	Yes/ 2 Qtrs.	10		
TOTALS	800	16 progs. 16 students	26	108		

* represents total senior enrollments, not majors.

2. Special Focus on Selected Science Departmental Programs

(Summary of Senior Year In Biology, Biochemistry, Chemistry and Physics)

	Bio.	Biochem.	Chem.	Phys.
Ave. # of graduating majors:	~115	35-40	~34	~10
% Seniors with ≥2 qtrs. research:	~25%	23-30%	47%	20%
GPA restrictions on research:	≥3.5	≥ 3.3	none	informal
Formal research report required?	Yes	No	No	No
Grading in research:	grade	P/N first 2 qtrs.	P/N	grade
Destination of majors:				
Grad school:	—	~10%	15%	a
Science related professional school:	—	70%	49%	
Industry:	—	~10%	12%	
Should research be mandatory?	No	No	No	No

a) Over 90% go into science.

Comments by Selected Science Departmental Representatives:

Biology (Constance Campbell)

Thoughts on a Senior Thesis proposal: I feel that a research experience is an extremely good experience for some research-oriented students in Biological Sciences. The Honors Program is a good example of this, in that it takes highly motivated and academically outstanding students and gives them an opportunity to explore their research abilities. This is almost always a positive experience for them in that they are trained in research attitudes and techniques, they learn their strengths and weaknesses, they learn responsibility and independent thought, they exercise their creativity and they even publish papers based on their results.

I do not think that such an experience, in the form of a senior thesis, should be required. My feelings are based on several reasons. 1. It is very difficult to design good biological research which does not require a considerable amount of time and effort. Bad biological research is not worth doing, even simply as a learning experience...since research takes so much time that study time for classes can be compromised. I think that the academic performance of many of our majors would suffer from this conflict and many of them could not afford this. 2. I think that not all our majors are interested in such an experience. Finally, the University provides no financial support for undergraduate student research; all student research now comes out of federal research grants. To add additional student research to this burden would be inappropriate, inefficient and terribly costly--if not an illegal use of federal funds.

Biochemistry (Neil Welker)

For those students who are committed to a career in some field of the life sciences, participation in [an] undergraduate research program is extremely valuable and an important aspect of their overall training in biochemistry and molecular biology. I don't think that it would be valuable to all of our seniors since many of them are mainly concerned about getting into medical school and do not want to spend the time doing the kind of research that is required of them in this program. I don't think that a senior thesis would be desirable at this time, however one might require a written report on the accomplishments during their research stay in a faculty advisor's laboratory. At one time we considered a special senior seminar and even held several seminars, presented by the faculty. Since attendance at these seminars was poor we assumed that a majority of our majors were either not interested or did not have the time.

As far as our department is concerned, we are going to try harder to increase the number of students who are participating in our research

program. There are many very good pre-professional students who have not been encouraged to get involved in research.

Those students who demonstrate superior ability or show exceptional promise in independent research are invited to make application to our four-year BA/MS program.

Chemistry (Du Shriver)

Students with reasonable ability are encouraged by advisors and instructors to pursue undergraduate research. Even though a specialized topic is pursued, the experience generally is broadening, because the student frequently has to apply to his research knowledge gained in a variety of disciplines. Undergraduate research also provides a degree of hands-on experience which is not obtainable in our laboratory courses. These students also have mail boxes and receive the Departmental Weekly Bulletin, which announces seminars and the like. These types of contacts provide students with a perspective which is not available in the classroom.

There is general satisfaction among the faculty with the current practices in undergraduate research; however, the requirement of a final research report is being discussed.

Physics (George Wong)

Undergraduate research is definitely a useful option for most but not all seniors. We feel therefore that it should not be required for all seniors. I do not know of any major physics departments which still require their seniors to write a senior thesis. MIT has discontinued this practice. Weighing the potential benefits to the student against the time and effort required of the student and his sponsoring faculty, we do not feel [a] senior thesis is desirable. Most general seminars and colloquia given in our department should be understandable for our better seniors. In addition, our chapter of Society of Physics Students offers several talks a year on the various research areas in physics. We therefore do not feel the need for a special senior seminar.

The general consensus of our department is that the present system allows sufficient flexibility so that students desiring exposures to "real" research or in depth studies of a standard topic have ample opportunity to do so. We feel that while the seniors should be strongly encouraged to participate in undergraduate research, the results should be carefully monitored for a couple of years before undergraduate research is made a requirement.

Summary of Selected Science Honors Programs

Responses to the questionnaire from the hard science departments and discussions with representatives from these departments leads me to believe that a uniform approach to the senior year is not practical. For example, the ratio of graduating seniors to tenure-track faculty varies widely: 6 for Biology, 3.7 for Biochemistry, 1.3 for Chemistry, and 0.7 in Physics. Another significant variation is the professional goals of our students; thus Biology, Biochemistry and Chemistry all have high percentages of premedical students, whereas Physics does not.

I did not receive any simple suggestions for the improvement of the senior year. There is a strong concensus that undergraduate research is valuable for bright motivated seniors, but that it is not something we wish to require of all of our seniors. Various types of Senior Seminars have been tried without success.

(D. Shriver, 3-80)

V. Assessment of CAS Senior Year Patterns

(Transcript Survey)

In January 1980, the CPC decided to undertake a survey of CAS candidates for graduation, (June 1979) utilizing information from the Registrar's Office. Of the approximately 750 CAS students, we selected 150 (20%) by means of a random sample. Copies of the transcripts of these students were made available to a sub-committee of the CPC (not involving the CPC student representatives). After preliminary analysis of the transcripts, a questionnaire was designed which would tap information such as: (1) Personal characteristics (age, sex); (2) Department; (3) Performance of Student (GPA-type data, honors, certificates, etc.); (4) College Career Pattern (advanced placement credits, transfer credits, foreign study, internships); (5) Pattern of senior year courses (number of credit courses attempted/completed each term); (6) Departmental courses and requirements in senior year (by level, requirement, independent study, honors, etc.); (7) CAS requirements in senior year (language, general distribution requirements, other); (8) optional courses (in and out of division, non-credit courses, sports, etc.); (9) BA/MA information (where applicable). The code sheet is contained in the Appendix.

All of this information has been put in machine readable form, and patterns have been analyzed within categories, and across categories.

The purpose of this transcript analysis is to provide an accurate picture of the ways in which senior students arrange their curricular schedules under the present system. We are aware that many of the constraints on schedules are changing, in ways which we have tried to identify in this report. However, the establishment of a baseline of information from which we assess changes in the future seems imperative.

1. Honors Programs

1.1 Departmental Honors

Departmental honors consist of students recommended by departments on the basis of grade point average and other evidence of excellence (C98, C99, D-levels are among the criteria often used). Those in the sample receiving such honors constituted 11.3% of graduating seniors.

There are no strong correlations between those receiving such honors and other variables in the survey, except for those directly related to the award.

1.2 College Honors

Students graduating with distinction or highest distinction are normally selected on the basis of their rank in terms of Grade Point Average/Class Standing. In our sample, 2.7% of the students fell into this category. Ideally 5% of a grad class is picked, so our sample is a bit low, (or the selection was lower than expected.)

There are no strong correlations between those receiving such honors and other variables in the survey, except those directly related (e.g. GPA).

1.3 Phi Beta Kappa

Phi Beta Kappa is a national association which selects its members from within the top ranks of the class, based on GPA and other criteria such as breadth of education. No more than 10% of a class may be admitted to PBK. In our sample 8% received this honor.

There are no strong correlations between those receiving such honors and other variables in the survey, again, except GPA. Older students were not in PBK.

1.4 Accelerated Degree programs: The Four Year BA/MA

The BA/MA program requires admission to the graduate school in the "fourth year", and the completion of MA degree requirements in addition to BA degree requirements. Each participating department has a special selection committee which judges not only Grade Point Average, but potential for graduate work. In cases where this program is undertaken, a large portion of the senior year is taken up with D-level courses. In our sample, 3.3% of the students were involved.

There are several observed relationships between students who do the BA/MA program and other variables.

--No BA/MA students went on Foreign study, and most did not take courses outside CAS.

--BA/MA students were "seniors" for four or five quarters, in general. (That is, they had achieved 33 units well before the start of the fall term of their senior year. All BA/MA students finished in June.)

--All BA/MA students were present Fall/Winter/Spring of senior year. (This is essentially a requirement of the program.)

--There is a positive relationship between total number of credits at time of graduation and BA/MA status. Thus all BA/MA students had more than the required 45 credits to graduate.

--All BA/MA students had finished their language requirements before the senior year, but most had other distribution requirements to meet.

--BA/MA students were not necessarily in the top GPA group, falling rather into the high middle range. None of the BA/MA students received Phi Beta Kappa honors, or departmental honors. It seems a student generally has to pick between BA/MA and a department honors oriented program though the requirements often overlap.

--There is a positive relationship between participation in BA/MA programs and independent studies in major.

A rank ordered cluster of variables which best accounts for the differences between BA/MA students and all others, includes the following:
Involvement in D-Level courses, higher total number of courses taken, higher number of C-99's and C-98's, non-involvement in departmental honors, earlier completion of departmental requirements.

1.5 Accelerated Degree Programs: 3 Year BA

The Three Year BA program entails selection at the Freshman entry level, and careful coordination of schedule throughout the three years. Students are given 9 credits upon entry into program and are released from a number of CAS distribution requirements. In our sample, 6.7% of the students who graduated were in this category.

There are some relationships between 3 year BA students and other variables.

-- Such students tended to have only 45 credits, necessary for graduation. (Since their "freshmen" year is given only 9 credits, they have less leeway during their 3 Years. They must take 4 courses each quarter, or make up somehow just to graduate.)

--Such students all finished in June, except one in August.

--Such students had finished language requirements, by time of senior year.

--Such students did not take courses outside CAS.

--A large number of 3 Year BA students were selected for Phi Beta Kappa.

--There is a strong positive relationship between GPA and 3 Year BA students. With regard to GPA in major, the 3 Year BA students were quite spread out.

A rank ordered cluster of variables which best accounts for the differences between 3 Year BA students and all others includes the following: higher numbers of advanced placement credit, involvement in departmental honors, spread senior year GPA, earlier date of completion.

2. Grade Point Average and Senior Year Patterns

2.1 Grade Point Average: Overall

The following table indicates the distribution of overall grade point averages for graduating seniors, with cumulative percentage indicated. (The scale is based on the following: A=4.00; B=3.00; C=2.00; D=1.00) The median is 3.24, mean is 3.20 and the range is 2.04.

GPA	Cumulative PCT	GPA	Cumulative PCT	GPA	Cumulative PCT
1.94	1	2.97	27	3.46	65
2.00	1	2.98	27	3.48	66
2.13	3	3.00	28	3.49	68
2.19	4	3.02	30	3.50	70
2.23	5	3.03	32	3.52	71
2.30	6	3.07	33	3.53	72
2.31	7	3.11	34	3.54	73
2.32	7	3.12	37	3.55	74
2.41	8	3.13	37	3.56	77
2.42	9	3.14	41	3.58	77
2.44	9	3.17	41	3.59	79
2.50	10	3.18	42	3.61	80
2.52	11	3.19	43	3.62	82
2.53	11	3.20	44	3.63	83
2.55	12	3.21	46	3.64	85
2.57	13	3.22	48	3.65	87
2.63	14	3.24	50	3.66	87
2.64	15	3.25	51	3.68	89
2.66	15	3.28	52	3.69	89
2.67	16	3.29	53	3.70	92
2.74	17	3.30	54	3.72	93
2.80	17	3.31	55	3.73	93
2.82	18	3.32	55	3.74	94
2.83	19	3.33	56	3.75	95
2.85	19	3.34	57	3.77	95
2.86	21	3.35	57	3.81	97
2.88	22	3.36	59	3.83	97
2.89	23	3.37	61	3.88	99
2.91	24	3.39	62	3.95	99
2.93	25	3.42	63	3.98	100%
2.95	25	3.43	64		

A clustering of this data into ordinal scale categories gives the following distribution.

1. Top 3% of sample = 3.88-4.00
2. Upper 4% to 5% = 3.75-3.83
3. Upper 6% to 10% = 3.7-3.74
4. Upper 11-24% = 3.56-3.69
5. Upper 25%-50% = 3.24-3.55
6. Lower 26%-49% = 2.97-3.22
7. Lowest 25% = 1.94-2.95

There are some relationships between GPA and other variables.

--The top ranked students are less likely to "take risks" in terms of undertaking atypical options, or extensive exploration of other departments, divisions, or schools.

--No student in the top 25% of class still had to complete language requirement in the senior year. Most of the students who had to complete such requirements were in the bottom 25% of the class.

--The top students are not transferring in credits, but do have advanced placement credits.

--High GPA students tend not to take five classes at a time.

--Only one top student was a 5th quarter senior.

A rank ordered cluster of variables which best accounts for the differences between top GPA students and all others is as follows:

--Top 10% students: selection to PBK, transfer credit not received after admission, fewer optional courses taken in division, fewer optional courses taken in CAS.

--Top 25% students: involvement in three year BA program, participation in foreign study, fewer optional courses taken in division.

2.2 Grade Point Average in Major Field

Grade Point Average in Major is calculated in the same way as overall GPA, but with reference only to courses in the Major field. The median is 3.28 and the mean is 3.20, which is very close to the overall GPA. The range is 2.67, which is greater than overall GPA. The distribution is an follows:

Grade Point Average in Major Department

GPA	Cumulative PCT	GPA	Cumulative PCT	GPA	Cumulative PCT
1.33	1	2.91	25	3.58	70
1.57	1	2.92	26	3.60	71
2.07	2	3.00	31	3.62	72
2.09	3	3.08	33	3.63	73
2.17	3	3.09	35	3.64	75
2.18	4	3.11	37	3.65	75
2.20	5	3.14	37	3.67	78
2.25	5	3.17	38	3.69	79
2.27	7	3.18	41	3.70	81
2.30	7	3.20	42	3.71	84
2.33	9	3.21	43	3.75	85
2.36	9	3.22	44	3.76	85
2.40	10	3.25	47	3.77	87
2.42	11	3.27	49	3.79	89
2.44	12	2.28	50	3.80	91
2.45	13	3.30	51	3.82	92
2.47	13	3.33	54	3.83	93
2.50	16	3.36	56	3.85	93
2.54	17	3.40	59	3.87	94
2.55	17	3.42	59	3.89	95
2.60	19	3.44	61	3.90	97
2.64	21	3.45	63	3.91	98
2.70	21	3.46	64	3.93	99
2.75	22	3.50	65	3.95	99
2.77	23	3.54	67	4.00	100
2.80	24	3.56	68		
2.83	25	3.57	69		

A clustering of this data into ordinal scale categories gives the following distribution:

1. Top 3% of sample: 3.90-4.00
2. Upper 4-5%: 3.89
3. Upper 6-10%: 3.80-3.87
4. Upper 11-24%: 3.67-3.79
5. Upper 25-50%: 3.28-3.65
6. Lower 26-49%: 2.91-3.27
7. Lowest 25%: 1.33-2.83

The bi-variate correlations of GPA in Major are similar to those in overall GPA.

2.3 Grade Point Average in Senior Year

GPA in senior year is calculated as above, but includes only grades achieved after attaining senior status. The mean is 3.24, the median is 3.32, and the range is 2.50. The distribution is as follows:

Grade Point Average Senior Year

GPA	Cumulative PCT	GPA	Cumulative PCT	GPA	Cumulative PCT
1.50	1	2.90	25	3.54	63
1.63	1	2.91	27	3.55	66
1.64	2	2.94	28	3.56	67
1.71	3	2.95	29	3.57	68
1.78	3	3.00	33	3.58	69
2.00	4	3.05	33	3.60	70
2.15	5	3.08	34	3.62	71
2.30	5	3.09	35	3.63	71
2.36	6	3.10	36	3.64	73
2.38	7	3.11	38	3.67	75
2.40	7	3.14	39	3.70	78
2.42	8	3.17	39	3.72	79
2.44	9	3.20	41	3.73	80
2.50	9	3.22	42	3.75	82
2.55	10	3.25	44	3.78	85
2.57	11	3.27	46	3.79	86
2.60	12	3.29	47	3.80	89
2.62	13	3.30	49	3.81	89
2.67	14	3.33	51	3.82	90
2.75	15	3.35	52	3.85	91
2.78	18	3.36	53	3.88	92
2.79	19	3.38	53	3.89	93
2.80	19	3.40	54	3.90	95
2.82	20	3.42	55	3.91	96
2.83	21	3.43	56	3.92	97
2.86	21	3.44	57	3.94	97
2.88	22	3.46	59	4.00	100
2.89	23	3.50	63		

The correlations are similar to other GPA correlations, with the exception of one variable. Those students who participate in junior year abroad programs lower their GPA's in the senior year.

3. Top Level Students (multiple indicators): Summary Patterns

We have combined several of the indicators discussed above into a single category of "top level students". The multiple indicators include inclusion in any of the following categories: top 10% of overall GPA; Phi Beta Kappa students; any departmental or college honors. A rank ordered cluster of variables which best accounts for the differences between such "top level students', and all others, includes following: higher levels of C-99 (independent study), median date of birth, earlier completion of distribution requirements.

4. Interdisciplinary Options

4.1 Double Majors

The percentage of graduating seniors completing second majors is 7.3%. The relationship between double majors and other variables is as follows:

--Most Double Major students are from the modal age group, i.e. neither older nor younger than their peer group.

--Slightly more men were double majors than expected.

--None of the Double Major students was based in departments where more than twelve courses are required for the major.

--No Double Major students were in the top 10% of GPA in class. About half were in the top half of the class, and half in the bottom half. (The same pattern is true of GPAs in major fields). In short, the GPA in both the major fields is lower than would be expected for other students in these fields. The senior year GPA is similar, and even more obvious that Double Major students are in lowest half of class.

--None graduate with distinction, or with honors in division. Only one student had departmental honors.

--Half of the Double Major students had advanced placement credit. (Only one had transfer credits, and none transferred in credits after admitted.)

--None went on foreign study.

--About 18% participated in internships of some kind.

--36% had 45 credits at graduation; 27% had 46 credits; 36% had more than 46 credits.

--46% were enrolled three quarters as senior; 36% were enrolled four quarters; 18% were enrolled five quarters or more.

--Two thirds finished in June, and one third in March.

--82% were present Fall/Winter/Spring, and 18% were not.

--None of the double major students were taking five courses per quarter. The majority take four in their first quarter, which decreases to half taking three and half taking four over the year.

--55% take a course pass-no-credit in the senior year. None have any incompletes. None have any A-levels in the major. 27% had at least one B-level to complete. Only one student took D-levels, (i.e. a student who was in the BA/MA program.)

--The mean number of major departmental requirements taken in senior year is three.

--Only 18% took at least one independent study in major, and none took C-98s (honors).

--9% had language requirements still pending in senior year.

--64% had some CAS distribution requirements still pending in senior year.

--36% took at least one optional course in the division. 55% took at least one optional course outside the division. 45% took at least one optional course outside CAS. (One student took up to five outside CAS.)

--18% took non-credit sports courses, (higher than overall average), but there were no other non-credit courses.

--One BA/MA student and no three year BA students.

--91% had four or less courses required for major pending in senior year. 91% had two or less CAS requirements pending.

4.2 Optional Courses Outside Division

The extent to which senior students have taken optional courses outside their division is indicated in the following table. The mean is 2.9 courses and the median is 2.4. There is considerable variation in terms of range. There are no significant correlations between this variable and other variables.

Optional Courses Outside Division

#Courses	#Students Absolute Frequency	Relative Frequency (PCT)	Cumulative Frequency (PCT)
0	20	13.3	13.3
1	31	20.7	34.0
2	26	17.3	51.3
3	24	16.0	67.3
4	10	6.7	74.0
5	15	10.0	84.0
6	9	6.0	90.0
7	10	6.7	96.7
8	2	1.3	98.0
9	1	.7	98.7
10	1	.7	99.3
11	1	.7	100.0%
Total	N=150	100.0%	

4.3 Optional Courses Outside the College of Arts and Sciences

The extent to which senior students have taken courses outside the College of Arts and Sciences is indicated in the following table. The mean is .89 courses and the median is .36. Most students (58%) had not done any work outside the College. There are no significant correlations between this variable and other variables.

Optional Courses Outside CAS

#Courses	#Students Absolute Frequency	Relative Frequency (PCT)	Cumulative Frequency (PCT)
0	87	58.0	58.0
1	32	21.3	79.3
2	9	6.0	85.3
3	11	7.3	92.7
4	8	5.3	98.0
5	2	1.3	99.3
8	1	.7	100.0%
Total	N=150	100.0%	

5. Special Options

5.1 Internships/Field Studies

A total of 4.7 percent of the graduating seniors had engaged in an academic internship or field study. Of these, the students were about equally divided between those who had obtained 1,2,3 or 4 credits through internships. There are several interesting relationships between this variable and other variables.

--There is a strong relationship (R=.40) between internships and taking optional courses outside CAS. (This is the only instance where internship students are doing something special, in addition to their internships.)

--Internship students do not take C-98 or C-99.

--Internship students are not 3 Year BA or BA/MA students.

--No internship student took any D-level course in senior year.

--Internship students all fit the median age, within their peer group.

No differences between men and women.

--Internship students are not in the top levels of GPA, and none are in Phi Beta Kappa.

A rank ordered cluster of variables which best accounts for the differences between internship students and all other students is as follows: more courses taken outside CAS, higher number of quarters in senior year, later date finished.

5.2 Junior Year Abroad Students

Only 2.7% of the senior students had spent their junior year abroad. There are some interesting correlations between this variable and other variables.

--All such students were at the median age within their peer group.

--Such students were from a variety of departmental majors (including science), and all in the top 25% of their class. (Note: This is a requirement.) However, only one student was in the top 5%.

--There is a positive relationships (R=.27, sig..0003) between foreign study and C-98 enrollment.

--There is a positive relationship (R=23, sig..0025) between junior year abroad students and number of courses taken pass/no credit in senior year.

--There is a positive relationship between foreign student and optional courses taken within division (but outside major field). Foreign study students are not likely to take courses outside their division.

--Foreign study students, upon returning for senior year, have a number of major field requirements to complete. Half had 8 or more major field requirements, and compensated by taking heavy loads in senior year, in which major requirements constituted more than half of their courses taken.

--Senior year grade point average tends to go down for foreign study students. Only 50% ended up in upper 25% of class, and 25% fell to the bottom 25% of the class.

5.3 Certificate Programs

There are a number of certificate programs in the College, such as African Studies, Asian Studies, women's studies, urban studies, etc. Certificates are noted on transcripts. However, they had not been entered on the transcripts in our analysis. Hence, there is no evidence as to how many students are engaged in such special options.

6. "Requirements" Patterns

6.1 Departmental Requirements

The average number of departmental major required courses taken by in senior year is 3.1, (median=2.9), with a wide range (from 0 to 10). The distribution is shown below.

Major Dept. Requirements Taken SR Year

#Course	#Students Absolute Frequency	Relative Frequency (PCT)	Cumulative Frequency (PCT)
0	13	8.7	8.7
1	22	14.7	23.3
2	23	15.3	38.7
3	35	23.3	62.7
4	25	16.7	78.7
5	14	9.3	88.0
6	9	6.0	94.0
7	4	2.7	96.7
8	3	2.0	98.7
9	1	.7	99.3
10	1	.7	100.0%
Total	N=150	100.0%	

There is no relationship between the number of departmental required courses undertaken in senior year, and the fall/winter/spring enrollment pattern (as distinct from other time options).

There is no relationship between this variable and the number of credits transferred in after initial admission.

The actual number of courses required for a major varies considerably by department or program. The mean number of such courses per student is 10.9, and the median is 10.3. The distribution pattern is shown below.

Number of Required Courses in Department

#Course	#Students Absolute Frequency	Relative Frequency (PCT)	Cumulative Frequency (PCT)
6	1	.7	.7
7	5	3.3	4.0
8	8	5.3	9.3
9	12	8.0	17.3
10	44	29.3	46.7
11	49	32.7	79.3
12	14	9.3	88.7
13	4	2.7	91.3
14	8	5.3	96.7
15	1	.7	97.3
16	1	.7	98.0
17	1	.7	98.7
22	1	.7	99.3
24	1	.7	100.0%
Total	N 150	100.0%	

6.2 College Requirements

College requirements consist of language proficiency, and general distribution courses. Most senior students (92%) have completed their language requirements, but only 40.7% have completed their general distribution requirements. The patterns are as follows.

Language Requirements Filled SR Year

#Course	#Students Absolute Frequency	Relative Frequency (PCT)	Cumulative Frequency (PCT)
0	138	92.0	92.0
1	3	2.0	94.0
2	4	2.7	96.7
3	4	2.7	99.3
4	1	.7	100.0%
Total	N=150	100.0%	

General Distribution Reqs SR Year

#Course	#Students Absolute Frequency	Relative Frequency (PCT)	Cumulative Frequency (PCT)
0	61	40.7	40.7
1	48	32.0	72.7
2	27	18.0	90.7
3	8	5.3	96.0
4	6	4.0	100.0%
Total	N=150	100.0	

There are no apparent correlations between these variables and other variables.

6.3 All Requirements (Departmental and College)

This composite variable is important because it distinguishes all courses taken in senior year as "required" or "optional". The number of required courses in senior year for most students is perhaps lower than might be expected, (half of the students have 4 or less) which may leave room for "optional" courses. The frequencies are indicated in the table below.

# Requirements taken senior year	# Students	Relative Freqency (percent)	Cumulative Frequency (Percent)
0	2	1.3	1.3
1	12	8.0	9.3
2	11	7.3	16.6
3	25	16.7	33.3
4	21	14.0	47.3
5	27	18.0	65.3
6	22	14.7	80.0
7	10	6.7	86.7
8	11	7.3	94.0
9	5	3.3	97.3
10	--	--	--
11	1	.7	98.0
12	2	1.3	99.3
13	--	--	--
14	1	.7	100.9%

The relationships between this composite variable and other variables are quite interesting.

--All types of departments have students who need to fulfill more than 6 requirements in senior year, but there is a correlation between this variable and the number of departmental courses required, as might be expected.

--Those students receiving higher amounts of advanced placement credit, end up with more requirements in senior year. (Possible interpretation: AP credits means a student becomes a senior more quickly, but this does not necessarily

help in fulfilling requirements.) (This does not seem to be the case with transferred credits.)

--There is a positive relationship between this variable and the number of quarters enrolled as a senior, but not to the quarter when finished.

--There is no apparent relationship between this variable and the number of P-N courses taken.

--There is a strong relationship (positive) between this variable and the total number of courses in major senior year (R=.42, sig. = .0000). The interesting cases are those taking substantially more courses in their major than required courses--very narrow academically.

--There is a slight negative relationship (R=-.11, sig. .09) between this variable and the number of D-level courses taken.

--The number of both B-level and C-level courses is positively related to this variable.

7. Organization of the Senior Academic Year

7.1 Term Sequencing

Three questions posed, with regard to term sequencing, are: is the student present fall, winter, spring of the final year, (78% yes, 22%, no); what quarter is all work finished, (see table below.); and what number of quarters enrolled as a senior, (see table below).

Quarter When Finished All Work

	Month	# Students Absolute Frequency	Relative Frequency (PCT)	Cumulative Frequency (PCT)
June	1	114	76.0	76.7
Aug.	2	3	2.0	78.7
Dec.	3	8	5.3	84.0
Mar.	4	23	15.3	99.3
(Not in Finish) 6/79	5	2	1.4	100.0%
	Total	N=150	100.0%	

Number Quarters Enrolled as Senior

#Quarters	#Students Absolute Frequency	Relative Frequency (PCT)	Cumulative Frequency (PCT)
0*	1	.7	.7
1	1	.7	1.3
2	14	9.3	10.7
3	84	56.0	66.7
4	37	24.7	91.3
5	7	4.7	96.0
6	4	2.7	98.7
7	2	1.3	100.0%
Total	N=150	100.0%	

*Never Finished

Several correlations are of interest:

--GPA is not related to when a student finishes, nor is it related to the number of departmental requirements.

--Quarters enrolled as a senior is positively correlated to number of C-level and D-level courses taken, as expected.

--The Fall/Winter/Spring sequence is not affected by any of the honors variables.

--Virtually all science majors graduate in June. Fewer social sciences students than expected follow the F/W/S sequence.

7.2 The 45 Unit Graduation Requirement

The required number of credits for graduation is 45, except in cases of special programs. There is no upper limit to the number of credits a student may take, however, and many students exceed the required number. The mean for all students is 46 credits, and the median is 45.4. The distribution is as follows:

Numbers Credits at Graduation (As of June 1979)

#Credits	#Students Absolute Frequency	Relative Frequency (PCT)	Cumulative Frequency (PCT)
28 *	1	.7	.7
35 *	1	.7	1.3
43 (?)	1	.7	2.0
45	79	52.7	55.0
46	26	17.3	72.5
47	9	6.0	78.5
48	10	6.7	85.2
49	4	2.7	87.9
50	2	1.3	89.3
51	5	3.3	92.6
53	7	4.7	97.3
54	2	1.3	98.7
55	1	.7	99.3
57	1	.7	100.0
	1	.7	
Total	N=150	100.0	

* Did not graduate in June.

There are some relationships between this variable and other variables.

--There is a positive relationship (R=28) between number of credits and D-level courses taken senior year; also between number of credits and total courses in major, senior year (R=.40, sig. = .000.)

--Students with low GPAs still take more than 46 credits.

--Students who take courses above and beyond what is required also tend to take independent studies in their majors and elsewhere.

--There is a slight inverse relationship between number of credits and number of courses taken P-N. Students with more than 46 credits were much less likely to take courses pass-no-credit, while students with only 45 credits were much more likely to take P-N.

7.3 Number of Courses per quarter (senior year)

The pattern of number of courses per quarter is as follows:

Number & Percentage of Students

#courses	1st quarter		2nd quarter		3rd quarter		4th quarter	
0	1	.7%	1	.7%	14	9.3%	99	66.0%
1	4	2.7%	-	--	2	1.3%	3	2.0%
2	2	1.3%	8	5.3%	17	11.3%	8	5.3%
3	19	12.7%	29	19.3%	49	32.7%	29	19.3%
4	118	78.7%	104	69.3%	64	42.7%	11	7.3%
5	6	4.0%	8	5.3%	4	2.7%	--	--
	N= 150	100%	N= 150	100%	N=150	100%	N=150	100%
Mean =	3.8		3.7		3.0		1.00	
Median =	3.9		3.8		3.3		.25	

In short, the number of courses taken decreases over the course of the senior year. A question arises as to which students are taking the fifth courses each term. They are not students in the top Grade Point Average group, or in the Phi Beta Kappa group. They seem to represent a vareity of departments, as follows:

1st quarter	2nd quarter	3rd quarter
Biology	Economics	Comparative Literature
History	English	Economics
Linguistics	History	English
Economics	Political Science	
American Culture		

7.4 Pass/No Credit Courses in Senior Year

Pass/No-Credit courses are intended to allow students to explore fields outside of their major. The average number of P-N courses taken senior year is 1.2, and the median is 1.1. There is a considerable range, as indicated below.

Courses Taken Pass-No Credit SR Year

#Courses	#Students Absolute Frequency	Relative Frequency (PCT)	Cumulative Frequency (PCT)
0	49	32.7	32.7
1	44	29.3	62.0
2	38	25.3	87.3
3	13	8.7	96.0
4	4	2.7	98.7
5	1	.7	99.3
8	1	.7	100.0%
Total	N=150	100.0%	

There appears to be a relationship between the number of C-levels taken and the number of P-N courses taken. There is no relationship between P-N courses and number of required courses in department, or with GPA.

7.5 Levels of Courses in Major Senior Year

In general, A-level courses are introductions to a field, and usually taken in the freshmen year. B-level courses are usually introductions to a sub-field within a discipline, and are usually taken in the sophomore or junior year. C-level courses are more advanced explorations of a field, and are usually taken in the junior or senior year. D-level courses are graduate level. The number and percentage of senior students taking courses in major field, by level, is shown below.

Levels of Courses in Major Senior Year

#courses	A-level	courses	B-level	courses	C-level	Courses	D-level	Courses
0	147	98.0%	102	68.0%	4	2.7%	129	86.0%
1	2	1.3%	35	23.3%	11	7.3%	8	5.3%
2	1	.7%	9	6.0%	24	16.0%	3	2.0%
3			3	2.0%	31	20.7%		
4			1	7.0%	31	20.7%	2	1.3%
5					20	13.3%	3	2.0%
6					11	7.3%		
7					10	6.7%	2	1.3%
8					2	1.3%	2	1.3%
9					6	4.0%	1	.7%
Mean:	.027		.440		3.88		.51	
Median:	.010		.235		3.66		.08	

There is a weak relationship between number of D-levels taken and the C-98 honors programs (R=.17, sig. .02).

8. Effect of Advanced Placement and Transfer Credits on Senior Year Patte

8.1 Advanced Placement

Advanced Placement credits are given upon entry to the College, for advanced work done in High School. The mean for all students is 2.3, and the median is .4, distributed as follows:

Advanced Placement Credit Received

#APs	#Students Absolute Frequency	Relative Frequency (PCT)	Cumulative Frequency (PCT)
0	83	55.3	55.3
1	5	3.3	58.7
2	9	6.0	64.7
3	16	10.7	75.3
4	2	1.3	76.7
5	6	4.0	80.7
6	8	5.3	86.0
7	1	.7	86.7
8	2	1.3	88.0
9	17	11.3	99.3
11	1	.7	100.0%

Advanced Placement credit is not strongly related to any particular major field, but is related to GPA and Phi Beta Kappa.

8.2 Transfer Credits

These are two types of transfer credits: those received at time of admission, and those received after admission (e.g. from a summer school or abroad program at another college). The distributions are as follows:

Transfer Credits at Admission

#Credits	#Students Absolute Frequency	Relative Frequency (PCT)	Cumulative Frequency (PCT
0	120	80.0	80.0
1	2	1.3	81.3
2	4	2.7	84.0
4	1	.7	84.7
7	2	1.3	86.0
9	1	.7	86.7
10	2	1.3	88.0
12	2	1.3	89.3
13	1	.7	90.0
15	1	.7	90.7
16	2	1.3	92.0
20	1	.7	92.7
21	2	1.3	94.0
22	5	3.3	97.3
24	2	1.3	98.7
25	1	.7	99.3
28	1	.7	100.0%
Total	N=150	100.0%	

Transfer Credits Received After Admission

#Credits	#Students Absolute Frequency	Relative Frequency (PCT)	Cumulative Frequency (PCT)
0	126	84.0	84.0
1	7	4.7	88.7
2	6	4.0	92.7
3	6	4.0	96.7
4	2	1.3	98.0
9	1	.7	98.7
11	1	.7	99.3
20	1	.7	100.0%
Total	N=150	100.0%	

There is a slight inverse relationship between number of transfer credits and number of D-levels taken.

9. Student Background Characteristics and Senior Year Patterns

9.1 Age

There are two variables on the transcript which indicates age: year of birth, and year of high school graduation. They are almost perfectly correlated so we have chosen year of birth. The mean/median is about 1957, i.e. students are about 22 years old when they graduate. The distribution patterns are as follows:

Year of Birth

#Year	#Students Absolute Frequency	Relative Frequency (PCT)	Cumulative Frequency (PCT)
1942	1	.7	.7
1946	1	.7	1.3
1950	1	.7	2.0
1953	2	1.3	3.3
1954	4	1.3	4.7
1955	5	3.3	8.0
1956	24	16.0	24.0
1957	93	62.0	86.0
1958	20	13.3	99.3
1959	1	.7	100.0%
Total	N=150	100.0%	

Of particular interest are the older, returning students. They are characterized by having no Advanced Placement credits. They are more spread out as to when they finish, and less likely to be present in the fall/winter/spring sequence. They are more likely to be on the low side in the number of courses taken, i.e. they are getting out as soon as possible.

9.2 Sex

The distribution by sex is as follows:

Sex	#Students Absolute Frequency	Relative Frequency (PCT)
Female	59	39.3
Male	91	60.7
Total	N=150	100.0%

In general, there are few differences in the academic patterns between men and women. For example, there is no relationship to Advanced Placement credit. However, men take slightly longer to finish than women. More women are not present in the fall/winter/spring sequence. More men than expected (statistically) take five courses in the first and third quarters senior year, and more women than expected (statistically) take five courses in the second quarter of the senior year.

10. Departmental Variations in Senior Year Patterns

10.1 Size of Department

In our 20% random sample, the number of graduating seniors by department is as follows:

Department	#Students Absolute Frequency	Relative Frequency (PCT)
ADHC	2	1.3
AMCU	5	3.3
ANTH	4	2.7
ART	1	.7
ARTH	1	.7
BIOM	4	2.7
BIOS	11	7.3
CHEM	7	4.7
CIMP	3	2.0
ECON	29	19.3
ENGL	14	9.3
FREN	1	.7
GEOS	2	1.3
GERM	1	.7
H RL	1	.7
HIST	12	8.0
INSP	1	.7
LING	2	1.3
MATH	3	2.0
NEUR	1	.7
PHIL	7	4.7
POLS	23	15.3
PSYC	12	8.0
SLAV	1	.7
SOCI	2	1.3
Total	N=150	100.0%

These figures may be translated into another variable: average number of students in department, by size of department. The distribution is as follows:

Average Number of Seniors in Department

Category Label	Size	#Students Absolute Frequency	Relative Freq. (PCT)	Cumulative Frequency (PCT)
Small Dept.	1.	15	10.0	10.0
Medium Dept.	2.	34	22.7	32.7
Large Dept.	3.	36	17.3	50.0
Very Large Dept.	4.	75	50.0	100.0%
	Total	N=150	100.0%	

There is a slight positive relationship between the size of a department, and whether a student major takes courses outside CAS, but it is not statistically significant. In short, there are no correlations between departmental size and other academic patterns.

10.2 Divisional and Departmental Variations

While some minor variations between departments have been mentioned throughout, the dominant pattern is that there are fewer variations between departments and/or between divisions than might be imagined. The three divisions (science, social science/humanities) are somewhat arbitrary at best, and the senior year patterns of students in each area are more likely to reflect particular student styles or strategies, rather than disciplinary trends. Nor do we see any value in displaying data by departments, unless clear general trends are discernable, since each department and division represents a cluster of more specific variables which we have analysed in detail.

We have undertaken a special analysis of all variables by division, however, and this will be presented in the appendix.

11. Summary of Patterns in Transcript Survey

We note again that the survey was based on a random sample, and there may be minor errors which result from the sampling process. At the same time, there are several obvious patterns which are evident, which may be summarized as follows:

--Top level students are more intellectually conservative in choice of courses, and are characterized by early completion of distribution requirements.

--There is more flexibility in the senior year at present, in terms of optional courses vs. required courses, than may be recognized. Half of all seniors have only one-third of their senior courses as requirements.

--The number of courses taken outside of the major field in the senior year is minimal.

--Internship programs have been undertaken by students who have been less strong academically, but seniors with internship experience tend to be broader than most in their choice of courses outside CAS.

--Junior year abroad students have more major requirements to fulfill in their senior year, and more courses in general. Their GPA's tend to drop.

--About three quarters of the "seniors" finish in June, and about 15% finish "early" (in March). The rest finish "late" (i.e. August & December).

--Almost half of the sniors take more than the 45 units required for graduation. (This figure may go upfurther with term pricing.)

--P/N options are not a major factor in the senior year.

--About one-third of the students still have at least one "B" level course to complete in their senior year.

--Nearly half of all seniors entered the college with some A-P credit.

--About 20% transferred in credit at entry, and 15% transferred in credits after arrival.

--The age profile is very uniform, with only a few variations from the mean.

--There are no major academic differences between men and women.

--Departmental size is <u>not</u> related to academic patterns of seniors in other spheres.

VI. Comparative Options:

Senior-Year Programs in Other Colleges and Universities

The senior, or final year of undergraduate study, is probably the least academically structured period of study for most arts and sciences students in the United States. In order to determine how the senior year is organized at some other institutions, the 1980 catalogues of twenty-five major U.S. colleges and universities have been consulted. Surprisingly, of these select institutions, not one provides either required or recommended programs for the general fourth-year student. There are, to be sure, special programs for the gifted or highly motivated senior, leading to an honors degree, or to an early start in graduate or professional school. Some academic departments within some schools, moreover, require a special senior seminar from students pursuing a departmental major. But on the whole, each student is left to define his own senior-year program, according to the theory that once he has completed a freshman seminar, a writing course, and a distribution requirement, he should be prepared to organize his own course of specialized study within a major and minor field. Or, to view the matter from another perspective, the college of arts and sciences assumes the responsibility for ensuring that each student pursues a broad and diverse course of study during his first two years. After that, it becomes the responsibility of the individual academic departments to supervise the student's work in his chosen area, or areas, of specialization.

Although none of the twenty-five select institutions provide programs for the general fourth-year student, it may be useful to consider programs that exist for particular groups of seniors in the arts and sciences. These programs fall into three basic categories: first, honors programs supervised by individual academic departments, or special courses required by departments for students majoring in that field; second, college or university administered honors programs; and third, programs involving early admission to graduate or professional school.

1. Departmental Honors Programs or Seminars

Of the twenty-five institutions selected, twenty-two claimed that at least some of their departments offered an honors track. The only exceptions were institutions with special college or university-administered honors programs. In general, departmental honors programs consist in the preparation of thesis or project, and the successful completion of an oral examination. The honors requirements are fulfilled as part of the student's work toward his major. The student generally enrolls in a year-long course on thesis preparation, in addition to his other courses, during his senior year. He may also be required to enroll in a senior-year honors seminar. A few weeks before his graduation, the student's advisor, and one or more other members of the department, evaluate the candidate's work, and assign a degree of honors or distinction to his degree. In addition to the honors track, several institutions claimed that some departments

required all majors to complete a senior seminar or collequium, which encouraged the general student to draw his specialized study together through discussion, and the preparation of one or more longer papers.

A major problem with leaving the responsibility for administering honors programs or senior seminars to the individual departments is that many departments simply do not offer such programs. Most schools did not specify which of their departments offered on honors or senior seminar program. But of those that did, such as Stanford, more than one quarter of the departments provided no opportunity for honors. Moreover, few students elect to pursue an honors degree. In short, the system of departmental honors or senior seminar programs provides a structured program of advanced study to only a minority of students.

2. College or University-administered Honors Programs

The most comprehensive senior-year programs encountered were general honors programs administered by the college or university for students of all departments or specializations. Eight of the twenty-five institutions advertise such honors tracks. These are restricted mainly to a small group of talented and highly motivated students, who are often selected for participation in their first or second years. The programs seek to encourage independent study, and often exempt the student from many of the regular college or university Bachelors degree requirements. Because the programs vary from institution to institution, it may be useful to consider a few of them individually.

At Dartmouth, in addition to honors programs in many academic departments, there is also the Senior Fellows program. Each year, between ten and twelve superior students from the junior class are selected for participation. The Fellowship tenure includes the student's final three quarters at Dartmouth (of which at least one quarter must be spent on residence), and involves a financial award of one quarter's free tuition, or a monetary equivalent. Before applying for the Senior Fellows program, a student must first locate a faculty advisor. Both the student and his advisor must then present the Senior Fellows Committee with a detailed written description of a project to be completed within the Fellowship tenure. Once admitted to the program, the Senior Fellow is granted considerable freedom from regular degree requirements while he prepares his project. Although he must complete those courses which the Senior Fellows Committee prescribes, he need not fulfill course requirements for major or minor specialization. At the completion of the spring term, the Fellow's advisor, and two additional examiners appointed by the Committee, assess the project and prepare a Citation Report, which then becomes part of the student's permanent record at Dartmouth.

Students in their junior year at Vanderbilt may apply for admittance to the Senior Scholar program. Although it involves no financial reward, Vanderbilt's Senior Scholar program is similar to the Dartmouth program in that it allows superior students freedom to prepare an extensive senior-year thesis or project, exempt from normal degree requirements. The Senior Scholar completes his project under the supervision of one or more faculty advisors. The project is then

assessed by Vanderbilt's Committee on Individual Programs as either Distinguished, Pass, or Fail. At the University of Virginia, students are selected for the University Honors Program in their freshman or sophomore year. Honors Scholars may then devote both their junior and senior year to the completion of a major thesis or project, and to independent reading for an oral examination. The Scholar is exempt from any course requirements, although he may audit courses. His independent study is directed by a faculty tutor, under the supervision of the Committee on Special Honors and the Assistant Dean for Special Scholars. The Scholar's thesis or project, and his performance on the oral examination, are evaluated by a panel of visiting examiners from other colleges and universities, who determine the degree of honors the student shall receive.

One of the more innovative honors programs is that at Swarthmore. Here, upper-class students have a choice between two methods of study--the regular "course program," involving the completion of the specified number of courses within a major and minor field, and the special "external examination," or honors program. Virtually any student in good standing may decide, at the end of his second year, to read for honors. Students who enter the external examination program devote their final two years to intensive independent study in a major, and one or two minor concentration fields. They may audit courses, but they are exempt from all regular course requirements, including term papers and examinations. At the close of this senior year, the honors candidate writes a series of six three-hour, in-class essays--four in his major field and two in his minor. The essay

topics are defined and the papers judged by visiting examiners from other colleges and universities, who determine the degree of honors the candidate shall receive on his diploma. In order to ensure, meanwhile, that honors candidates are making satisfactory progress, each candidate is required to complete a trial examination at the close of his junior year. For the trial examination, the junior completes the same six essays in his major and minor concentration fields that are given to seniors in that year. His trial essays are then graded by a committee of Swarthmore faculty. If he fails on this trial, he may be required to return to the less demanding course program.

Unlike the system of departmental honors programs, college or university-administered programs offer a comprehensive course of advanced study to students specializing in all disciplines. Such programs often provide social forums (meetings, parties, or dinners) in which students pursuing different specializations meet and discuss their work. By exempting students from the usual requirements for a departmental major, these programs seek to encourage interdisciplinary approaches as well as independent study. Nonetheless, the programs provide a structured senior-year course of study to only a small group of superior and highly-motivated students, and particularly to students planning a professional career in academics, who might benefit more than most students from an intense program of thesis and examination preparation.

3. Early Start in Graduate or Professional School

Five of the twenty-five select institutions advertise a program for an early beginning in graduate or professional school for college seniors with well-defined career plans. These programs evidently exist only in college of arts and sciences within larger universities. The programs vary slightly, but all involve early admission to a graduate or professional school within the same university as the college. The program may involve a combined Bachelors and Masters degree. At Brown, for instance, a student may be admitted to the graduate program in some disciplines in his junior year, and receive a combined degree in eight or nine semesters. Similar programs exist at Stanford, and in some departments at Berkeley. At these schools, the required number of courses for both the Bachelors and Masters degrees are reduced for the student in the combined degree program. At the Universities of Chicago and Pennsylvania, some students are encouraged to apply for early admission to graduate or professional schools in the university at the end of their junior year, and to enroll in graduate-level courses during their senior year. These schools offer no reduction in the required number of courses for either the Bachelors or Masters degrees. Nonetheless, the arrangement enables the student to complete many required graduate courses before he formally enters the Masters program, and therefore allows him to complete the required number of courses for the Masters with more advanced graduate courses. Students pursuing a Ph.D., moreover, may be able to complete their preliminary oral examination, and begin work on the dissertation, at an earlier date than usual.

The programs for an early beginning in graduate or professional school, although attractive to some students with definite career plans, serve to eliminate the senior year in a college of arts and sciences altogether. The fourth-year student's attention is focused upon his graduate studies, and away from his college experience. If it is true that the senior year, devoted to either the preparation of a major thesis or project, or to reflection upon the meaning of general study on the liberal arts and sciences, is a necessary part of the undergraduate experience, then students encouraged to begin graduate or professional studies after their third year may not be receiving a complete college education. With increasing tuition costs in the 1980s, it is to be expected that more and more students will demand, and more and more colleges and universities will offer, combined degree programs. This, in turn, may eventually lead to a shortening of the length of study required for a Bachelors degree at an increasing number of schools, until gradually the three-year Bachelors degree course becomes the norm.

It was somewhat surprising to obeserve that not one of the twenty-five major colleges and universities viewed in this study either require or recommend a uniform senior-year curriculum for the general, non-honors student. If the four-year Bachelors program is to be preserved in a era of increasing college costs, and increasing emphasis upon graduate degrees in the competition for jobs, schools may have to consider means to develop a more structured and challenging senior year curriculum, not only for honors candidates, but for all students.

SUMMARY TABLE

Institution	Honors Program in Most Departments	General University Honors Program	Early Start in Graduate or Professional School
Carleton	X		
Brown	X		X
Rochester	X		
Duke	X		
Rice	X		
Dartmouth	X	X	
Swarthmore	X	X	
Amherst		X	
Wisconsin	X		
Haverford	X		
Williams	X		
Washington Univ.	X		
Johns Hopkins	X		
Princeton	X	X	
Michigan	X		
Vanderbilt		X	
Berkeley	X		X
Pennsylvania	X	X	X
Virginia		X	
North Carolina	X		
Stanford	X		X
Chicago	X		X
William and Mary	X		
Cornell	X		
Harvard	X	X	

VII. Curricular Options Considered by CPC

At present, the senior year in the College of Arts and Sciences tends to be a race toward meeting college and departmental requirements for graduation, and a progressive narrowing down into an academic field. Such narrowing, (including accelerated degree programs) may be useful for some students but there are other students who may have diverse academic needs in their final year, including the need to synthesize previously acquired knowledge into larger patterns, to evaluate issues, or to mesh methodological skills across disciplinary boundaries. It is not clear that the "double major solution" achieves all of these objectives.

We have tried to consider options which cover a wide variety of needs and circumstances, including both honors and more generally accessible programs. We base our assessment on a careful analysis of existing patterns, and on our judgement as to the desireability of flexible options for a student body with increasingly diverse interests.

1. Honors Options

The purpose of honors programs is not just to encourage further specialization within a discipline, but to allow especially gifted students to explore fields in greater depth than is normally possible. Such exploration may be in interdisciplinary areas, or in areas of ethnics, or some other creative synthesis.

1.1 Departmental Honors Programs

We recognize that each department in the college will be in the best position to articulate an honors program suitable for its majors. We have considered various assumptions about entry criteria, and on average, feel that at least the top 10% of students in any department (by departmental grade point average, plus other criteria), should have access to such enriched programs, even under existing resource constraints.

1.2 College Honors Programs

At present, many students are fulfilling their interdisciplinary needs by means of double majors or ad hoc majors. We regard these programs as frequently weak, seldom appealing to the "top" students, and often lacking overall cohesion, especially where an attempt is made to link the majors substantively. We

1.5 The 3 Year BA Programs

Except in cases where there is a clear pre-professional career path and demonstrated need, we would not recommend that this option be enlarged. Despite the financial pressures on students to complete college, we feel that the breadth aspects of college inevitably get sacrificed in such a situation. By recommending the four year BA/MA programs in place of the 3 year BA programs, we are encouraging students to take fuller advantage of their college careers, while at the same time allowing for a delayed decision (i.e. during the junior year) as to the advisability of pre-professional specialization. Students coming into the 3 Year BA program in effect make their professional choices in high school, which may or may not be realistic. We recognize that the 3 Year BA students are among the top group in G.P.A., but see this as a direct result of specialization.

1.6 Proposal Design Seminars

For approximately 60% of the graduating seniors, who go on to graduate level professional training, the fall quarter of the senior year is often filled with problems of designing proposals for professional training, and/or for exploratory/broadening options (such as the Rhodes Scholarship, Fulbright, Luce, Marshall, etc). At present, about 50 CAS seniors apply each fall for the "honors" fellowships, and a much larger number are engaged in exploring professional options.

At the graduate level we often organize seminars focusing in on the skills, interactive discussions, and background readings which go into a high quality proposal. (There are often D and E level seminars on proposal design). We discussed the possibility that an optional seminar be made available on a college wide basis to senior students interested in developing individualized proposal designs. Such a course would be offered by the college, and would normally be taken P/N. Students would be admitted on a priority basis, i.e. with those applying for the "honors" fellowships given preference. After further deliberation, we decided not to pursue this option.

2. General Courses and Seminar Options for Seniors

At present, the bulk of courses taken in the senior year are at the C (or D) level. A and B level courses are probably less appropriate, and if taken in senior year are usually to meet requirements, rather than for some intrinsic value. We are proposing a new type of course at the C level, which is not based

on extensive prerequisities in the field, but rather on more general knowledge. Such a course would be quite different from the A or B level courses, which are often designed as "gateway" courses to the C level. We have three distinct types of new C level courses in mind. (The Capstone courses are described in more detail below in sub-section five.)

2.1(Capstone) Courses Within Discipline

Lecture courses in the medium size range could be developed by "Master-Teachers", which would be open to students from all departments. Such courses might be more topical in nature, somewhat like the Freshman Seminars. They would not have prerequisites, and would be assumed to open to all disciplines. Advanced Graduate Student (or recent Phds) Teaching Assistants would participate in the discussion sections. Departments would submit proposals on an annual basis for such courses, and approximately two departments from each division (i.e. 6 in all) would offer the courses.

2.2 (Capstone) Courses Across-Disciplines/Divisions

The same formal would hold as for the within-disciplinary courses, but the focus would be on multi-disciplinary issues. The teaching, ideally, would be by two Master-Teachers from different disciplines. The emphasis would be on relating fields of knowledge, or even synthesizing knowledge.

2.3 Linkage Seminars

There is a clear need in the senior year to establish links with the professional world. The design of small (12-18 person) seminars led by professional members of the community, would facilitate better communication between students and the professional world. By nature, such seminars would be interdisciplinary. Adjunct professors would be appointed by the Dean of CAS for short periods of time, (e.g. one or two quarters). Prerequisites would be deemphasized, and the exploratory nature of the seminars would be emphasized. (Since we would probably be drawing on Northwestern-related community professionals, salaries might be token.)

3. Special Options

3.1 Junior Year Abroad Capstone Program

At present, students returning from junior year abroad have problems meeting their general and departmental requirements in the senior year. (Note: Language requirements are not a problem, since language proficiency is required for admittance to the abroad programs.) Yet, most of the junior year abroad students have gained breadth and depth in an external context whatever their actual transfer credits. We discussed the idea of a special procedure for waiver petition, which would be monitored by the Senior Year Committee (rather than the Study Abroad Committee), which could then recommend waivers to the Committee on Appeals, if equivalences, broadly construed, could be established.

We also discussed the idea that the returning junior year abroad students be given an opportunity to participate in the tutoring of freshman and sophomore students with related interests. With the establishment of the thematic residential colleges, especially, International Studies Residential College (a thematic college which is in process of developing course offerings by associated faculty) we considered whether students returning from abroad should be encouraged to participate in the turorial process (under faculty supervision). Within the thematic colleges the experience would be good for the returning student, as a way of digesting and articulating the abroad experience, and for the upcoming students, who may get a more insightful approach to international studies topics. On further reflection, we decided to postpone recommendations in this area until direct discussions were undertaken with other involved committees.

3.2 Certificate Programs

Certificate programs are by definition interdisciplinary or multidisciplinary. At present, there are two types of certificates awarded in the senior year: area focus (e.g. Africa, Asia), and problem or intellectual focus (e.g. urban, women, environment). It is difficult to evaluate the real impact of these programs, because so little comparative data is available, (and perhaps much of the impact comes after graduation).

In the past, the certificate programs have had mixed success (if judged by student and faculty and faculty interest, or quality of special offerings). Part of

the problem, in some cases has been the lack of stable structural organization. Since the interdisciplinary impact of these certificate programs would be most noticeable at the senior year level, we discussed how they might strengthened in terms of: faculty director's time, program development, possible links with thematic colleges, and senior year synthezing seminars.

3.3 Senior Year Internships

While we support the concept of high quality internships, we do not feel they are as appropriate in the senior year, as at the sophomore or junior level. If off-campus options were to develop in the senior year, the best time would be fall quarter, (or third quarter before graduation.) A senior Year Committee should try to monitor internship patterns in the senior year. This is an area where more evaluation is appropriate.

4. The Organization and Monitoring of CAS Senior Year Options

While we approach the establishment of a "new committee" with some trepidation, the integral nature of the senior year seems to warrant special attention. In light of the proposals in this report, we discussed the establishment of a CAS Senior Year Committee, which would work closely with the Dean's Office, and the Curricular Policies Committee, in the further development, evaluation, and implementation of senior year option proposals.

Because of the serious problem of monitoring new curricular options without systematic educational statistics, we also discussed the idea that the Dean's Office set up resources for generating and updating the kinds of data which faculty committees need to undertake evaluation and monitoring.

5. Further Elaboration: Capstone Courses

The CAS will generate each year six lecture courses especially for seniors, with the object of providing spaces for a total of 600 students. They would be designed as capstones to an undergraduate career - a broadening out from the student's major to an interdisciplinary consideration of various topics. Each course would be taught in a department and the department would receive credit for the enrollments in the course. Each Division of the College (Sciences, Social Sciences, and Humanities) would be represented by two of the Capstone Courses per year. Students would become eligible to enroll in a Capstone Course by attaining senior standing in one of the departments of the Division.

The Capstone Courses would be taught by senior faculty recognized for their exceptional range of interests, multidisciplinary skills, and teaching excellence. The teachers for these courses would be designated by the Dean of the College for a period of three years as "CAS Master Teachers". They would be given released time where necessary to modify an existing course or to develop a new one for the program. They would also receive support from a special CAS Senior Year Budget for Teaching Assistants, teaching materials, audio-visual equipment, etc.

The CAS Dean's Office will also seek outside funding for six post-doctoral fellows per year who would teach seminars related to the Capstone Courses. Each of these post-doctoral fellows would offer two or three seminars satellited around a Capstone lecture course. The seminars would be open to seniors who were taking, or had completed, one of the Capstone Courses. However, a student enrolled in a Capstone course would not be required to take a satellite seminar.

The number and subjects that could be excellent Capstone Courses is beyond one person's or one committee's imagination. However, in order to illustrate the kind of courses contemplated by the proposal, here is a sample list of Capstone Courses and related seminars.

Lecture Course	Related Seminars
1. American Culture in the Twentieth Century	1A. Recent American Cultural History
	1B. The Sociology of Popular and High Culture in America
2. Political Economy of World Resources	2A. Steady State Economics: Theory and Policy
	2B. The Politics of Ecology
3. The Modernist Movement in Western Culture	3A. Modernist Critical Theories
	3B. Modern Philosophy and Modern Literature
4. Art and Life	4A. The Politics of Modern Art
	4B. The Philosophy of Art
5. Current Developments in the Life Sciences	5A. Ethics and Research in the Life Sciences
	5B. Biochemistry and the Origins of Life
6. Modern Cosmology	6A. Cosmology in Philosophy and Astrophysics
	6B. Space, Time, and Deity

6. Further Elaboration: A College Honors Program

Many of the Departments in the College of Arts and Sciences already offer programs leading to a degree with Departmental honors. For the most part, these programs involve participation in a senior honors seminar and completion of a major research project or thesis. It is assumed that the Departmental honors programs will continue, and indeed, that they will eventually be offered by every Department in the College. What follows, then, is a proposal for a separate College-wide, as opposed to Departmental, honors option.

A separate College-wide honors program should offer something different from the existing Departmental programs. It should not duplicate the Departmental research programs directed toward the preparation of an honors thesis or project. (Such focused research is probably better left to the supervision of the Departments.) Rather, the College-wide honors program should offer the option for a more general culmination of the liberal arts education--a broadening out of the educational experience.

The proposed College-wide honors program would require the honors candidate to devote a considerable portion of his or her senior year to independent reading and study, in preparation for a general essay examination in a broad field. The program would be administered by a CAS committee, and students would apply for admission during their junior year. Students selected for the program would be required to complete the requirements for a normal major. In addition, however, honors candidates would also prepare for a comprehensive essay examination in one of the six Distribution Requirement fields (Natural Sciences, Formal Studies, Social and Behavioral Sciences, Historical Studies, Values, or Literature and Fine Arts). The examination would consist of four to six essay questions, given to the students and prepared in a supervised room, in sessions lasting two hours each, on two or three different days. The examination would be taken in the late spring of the candidate's senior year, and it would be evaluated by a faculty committee. On the basis of the evaluation, the candidate

would be awarded either no Honors, College Honors, High College Honors, or Highest College Honors. Faculty committees for evaluating the examination essays might be appointed for each of the Distributional Areas, and each committee might also include one or more external evaluators from the faculties of other universities.

In order to allow them time for the additional preparation, students admitted into the College honors program would receive a reduction in the number of courses required for the normal degree. They would also be allowed to audit courses (with the permission of the instructor), as part of their examination preparation. The College honors candidates would receive a special designation (e.g., Payson Wild Scholars; John Evans Senior Scholars), and would be encouraged to meet together regularly during their senior year--either in a formal seminar setting, or in less formal wine and cheese gatherings or firesides. Each honors candidate would have a faculty adviser, to assist the student in organizing his or her plan for preparation. Students admitted into the College honors program might also be awarded a slight reduction in tuition--as a reflection of their reduced course load, but more importantly, as a means of honoring the high academic achievement which resulted in their admission to the program, and the extraordinary efforts involved in the preparation for the comprehensive examination.

VIII. Conclusions and Recommendations

At the appropriate time, the CAS Curricular Policies Committee will submit to the CAS Faculty the following proposal.

Introduction

In the belief that a student's academic experience should culminate with the senior year rather than simply peter out, the Curricular Policies Committee herewith offers proposals for senior year programs. For the past two years, the Committee has investigated the current patterns in the senior year of CAS students and has discussed a number of possible programs. We discovered that only about 12% of CAS seniors now participate in special academic programs, and that the 12% are mainly involved in some form of specialized study, such as individual research projects. Apart from students completing double majors, practically no seniors currently have access to senior programs that are broad and reflective in intent. To enrich the senior year and to make it a more satisfying experience for all students, the Committee recommends both modification of existing options and implementation of new programs. (Copies of the full Committee Report are available through department chairmen, or on request from the Dean's Office.)

The principles underlying our proposals are these:

1) A variety of types of programs should be available.

2) Every CAS senior should have access to at least one of the senior programs.

3) Participation by seniors in one or more of the programs will be optional, though strongly recommended by the Faculty.

4) The changes we propose in senior year programs should not make heavy additional demands on the existing resources of the departments.

Programs

1. Departmental Honors: According to CAS legislation, departmental honors are currently awarded to graduating seniors, nominated by their departments, for outstanding work in a department "in connection with a research project or an integrative type of work". The Committee urges each department to make a clear, well-publicized statement of its requirements for honors; to establish where possible 698 senior seminars for this purpose; and to provide opportunities for at least 10% of its seniors to work towards honors.

2. BA/MA Programs: The Committee urges each department to consider adopting a rigorous BA/MA program, whereby a student may graduate with both degrees after satisfactory completion of appropriate graduate as well as undergraduate courses.

3. College Honors: The Committee proposes inderdisciplinary senior honors programs of the following types:

   A. Interdisciplinary Senior Thesis: An interdisciplinary senior honors thesis program, available to seniors admitted at the end of their junior year. Students in the program will write senior theses after doing significant interdisciplinary research directed by an individually-tailored committee, each committee drawn from more than one department.

   B. Interdisciplinary Comprehensive Examination: Through regular courses and independent study, students admitted to this program would prepare for and write comprehensive exams in at least two related subjects, such as logic and mathematics, or history and literature. Each student in the program would be advised during the year by an individual ad hoc committee appointed by the Dean.

4. Capstone Courses: The Committee proposes a program of broad, interdisciplinary lecture courses (perhaps six a year) especially for seniors. The program will provide spaces for 600 students per year. The courses will be taught by "CAS Master Teachers", a corps of six outstanding lecturers (or more, if any of the Capstone Courses were to be team-taught) designated by the Dean, and supported by CAS funds for released time, T.A.'s, equipment, etc.

5. Senior Satellite Seminars: The Committee proposes in addition a slate of twelve to eighteen seminars per year, taught by post-doctoral fellows (or qualified ABD's) hired specifically for the purpose. Each seminar would be coordinated with one of the Capstone Courses, and would be open only to students who had taken, or were taking, the appropriate Capstone Course. Funds to hire the teachers would be sought by the Dean's Office from outside sources.

6. Senior Linkage Seminars: The Committee proposes a small number of seminars for seniors, taught by eminent non-academics of great intellectual merit (e.g. retired, or otherwise available, judges, physicians, lawyers, civil servants, diplomats, politicians, corporate executives, and social activists). This seminar ideally will be interdisciplinary in nature and will link the students' academic training to substantial public issues. Funds to hire the teachers will be sought by the Dean's Office from outside resources.

7. Seminars in Certificate Programs: The Committee urges the interdisciplinary certificate programs to develop integrative senior year seminars.

8. Senior Honors Publication Series: Finally, the Committee proposes the publication of a journal or annual volume, edited by students, and containing the results of especially meritorious efforts of senior honors research. Funds for the series would be sought by the Dean's Office from outside sources.

The Committee suggests that these programs would be developed and coordinated by a Senior Year Committee, much like the Distribution Requirements Committee. This Committee would also dispense such funds as might be available for the development and implementation of the programs. The Senior Year Committee would work closely with the Study Abroad Committee to devise suitable follow-up programs for students returning from abroad.

Resolutions

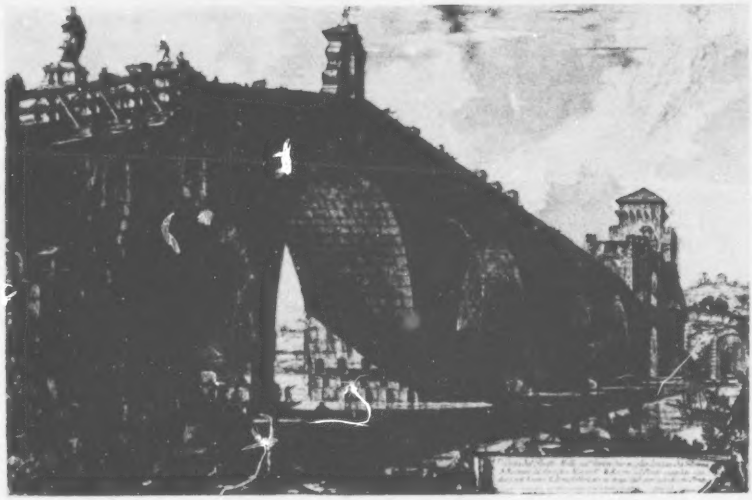
1. The CAS Faculty endorses the Report on the Senior Year presented by the Curricular Policies Committee, and while not making any of the options a requirement for graduation, strongly urges all CAS seniors to avail themselves of the Senior Year program.

2. A CAS Senior Year Committee will be constituted, consisting of ten members: a chairman, two members from each of the Divisions of the College, two students, and an Associate Dean of the College to serve ex-officio. At least one faculty member of the Committee should be a member of the Curricular Policies Committee. The CAS Committee on Committees will make nominations in the usual manner.

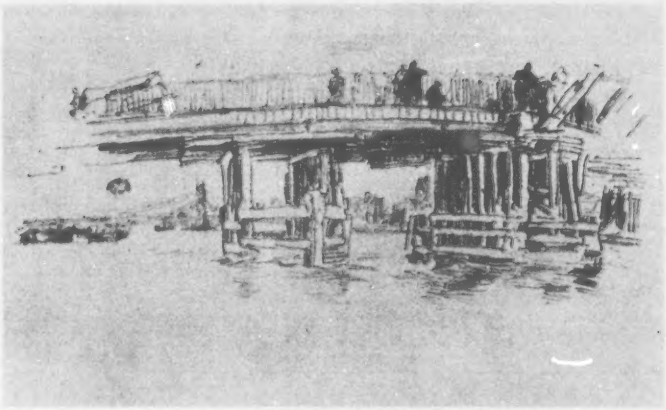
3. The Senior Year Committee will be responsible for the development and implementation of the Senior Year programs.

   In particular, the Senior Year Committee will recommend to the CAS Faculty detailed plans for the two College Honors Programs during the academic year 1981-82.

The Senior Year



The Senior Year



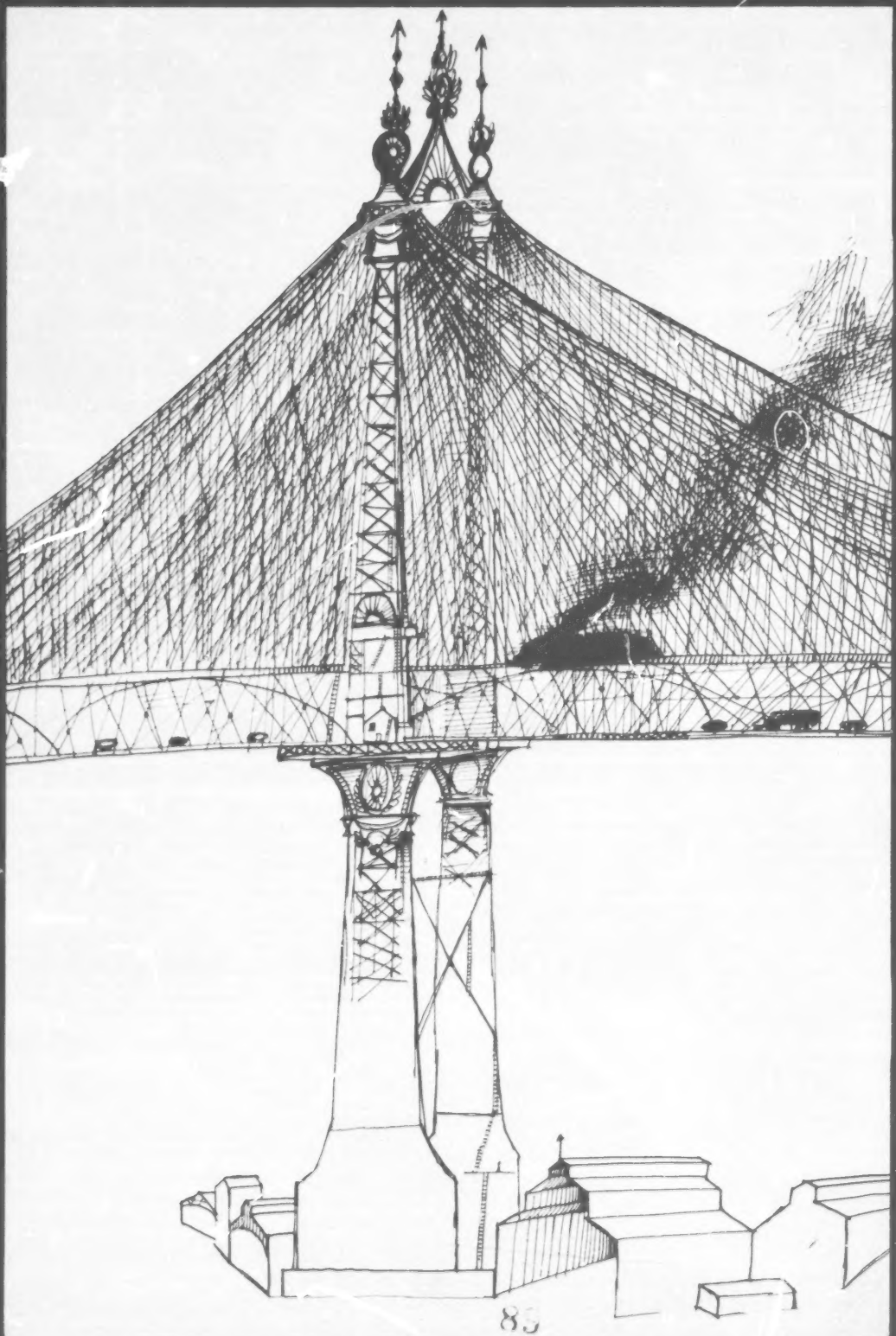
Life is of no value but as it brings us gratifications. Among the most valuable of these is rational society. It informs the mind, sweetens the temper, cheers our spirits, and promotes health.

Thomas Jefferson, 1743-1826, third president of the United States

In the senior year at Northwestern, students complete their undergraduate education in an atmosphere that encourages the broadening of intellectual horizons. Most seniors have fulfilled the Distribution Requirements, which provide a measure of breadth, and are finishing their major concentration. Now, perhaps for the first time, they have the chance to study an entirely new subject or to deepen their understanding of a familiar one.

To supplement the traditional curriculum, the faculty of the College of Arts and Sciences has devised two special kinds of elective courses available only to seniors—Capstone Courses and Linkage Seminars. These unique, interdisciplinary courses can be in any area of the arts and sciences, and they are open to seniors from any school of the University. Challenging and in some measure off-beat, they assume in their participants a degree of intellectual maturity equal to their seriousness of purpose. To the student interested in an unusual experience, they offer a distinctive senior year of exciting intellectual opportunity and stimulating intellectual contact.

In addition, qualified seniors may further enrich their program by taking Independent Studies, Senior Seminars, a Combined Degree Program, or a Certificate Program. Students recommended for Honors work have a variety of curricular options available to them.



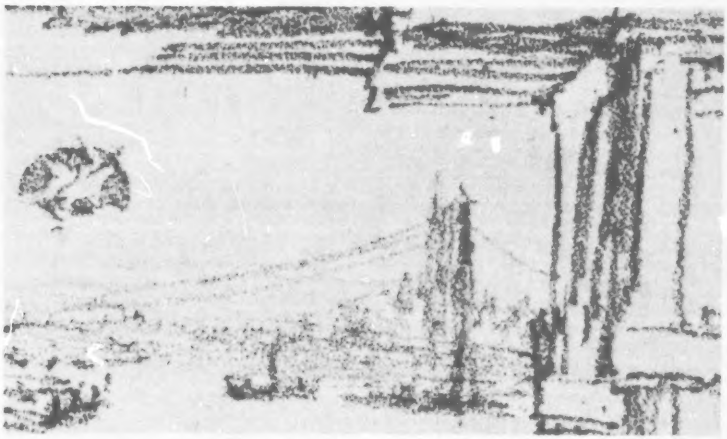
Capstone Courses

He that was only taught by himself had a fool for his master.

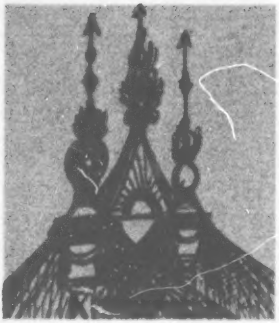
Ben Jonson, 1573?-1637
English dramatist

Capstone Courses are relatively large lecture courses taught by faculty members who have been honored for outstanding teaching. The purpose of Capstone Courses is to take a new approach in making an interdisciplinary investigation of some of the major issues confronting the modern world. Different from one another in approach, these courses are complementary in their emphasis on the relationship between human activity and human knowledge.

Providing the sense of intellectual excitement common to good lecture courses, Capstone Courses create their own community of scholars independent of departmental structure. In this, the courses are sometimes aided by satellite seminars, open to seniors who are taking, or who have taken, the relevant Capstone Course. These seminars, taught by regular faculty members or scholars who are completing or have just finished the doctorate, encourage small groups of students to discuss ideas and problems brought up in the Capstone Courses.



Saul Steinberg, American, 1914-, *Bridge*, pen and ink (courtesy of the Art Institute of Chicago)



Art and Culture. Can the words "primitive art" be justified? How can we appreciate or interpret the art of other cultures? How should galleries and museums present foreign art objects? This course employs elementary cognitive psychology and social and cultural theory to introduce ideas about aesthetics. Artistic traditions do not develop apart from society, and expressive forms are affected by social processes. The conventional structures used in artistic creation and the social processes of recognition and fashion change are analyzed to provide answers to these and other questions.

The Devil and the Problem of Evil in Western Thought. The problem of evil in Western thought is usually concerned with evil as personified in the devil. In this course, discussion begins with the devil's historical emergence as a being distinct from the God, an event traceable to the ancient civilizations of the Middle East, and then follows the devil through the Old Testament into the New, in which he became central to Christ's mission as understood within early Christianity. The devil's progress is traced through medieval Christianity to the Renaissance and the Reformation, focusing on witchcraft and the myth of the fortunate fall. The impact of the Enlightenment on the problem of evil in Western thought and the Romantic revolt against the eighteenth century are examined. Finally, views of evil from Freud and Jung down to Konrad Lorenz and Erich Fromm are studied; the course closes with a look at the revival of interest in the devil and the occult in the 1960s and 1970s.

Evaluation includes participation in discussion sections, a midterm examination, a term paper, and a final examination. Readings include the Book of Job; *The Life of St. Anthony*; J. Milton, *Paradise Lost*; Voltaire, *Candide*; P.B. Shelley, *Frankenstein*; R.L. Stevenson, *Dr. Jekyll and Mr. Hyde*; S. Freud, *Origin and Development of Psychoanalysis*; and W. Blatty, *The Exorcist*.

Literature, Society, and the Problem of History: Victorian England. The crisis of British society in the industrial age is investigated through readings, in roughly equal proportions, of modern historians and of Victorian novelists and social critics. The Victorian world is seen as a period of transition from traditional to modern life. Specific topics include the family, sex, and marriage; class relations; the impact of industrialization; and the crisis of belief. The larger goal of the course, however, is to stimulate reflection on the advantages and pitfalls of its own interdisciplinary method, on the use of imaginative literature as a source of historical information, and, conversely, on the claims of scientific history to construct an objectively true, verifiable picture of the past. The reading list grounds this question at every point in interesting concrete examples, but raises the question in theoretical terms as well. Readings include provocative modern theorists who stress the problematic relations between texts and the external world and even argue that the very nature of textuality prohibits the objective representation of reality.

United States Ecological History. In two quarters, which may be taken together or separately, this course analyzes the relationships between social change and the physical and biotic environments in which change takes place. The publication of Darwin's *On the Origin of Species* in 1859 divides the two halves of the sequence. The first quarter treats the emergence of a distinctively American adaptation to the North American environment and the rise of such problems as deforestation, water pollution, and urban-related diseases during the development of an industrial economy. The second quarter considers the impact of the industrial revolution of the late nineteenth century on the North American environment, including the environmental issues of the twentieth century and the historical, social, and economic backgrounds of the modern ecological movement.

There will be a midterm examination, a term paper, and a final essay examination. Readings include R. Detweiler, *Environmental Decay in Its Historical Context;* J. Lemon, *The Best Poor Man's Country: A Geographical Study of Early Southeastern Pennsylvania;* W. Goetzmann, *Exploration and Empire: The Explorer and the Scientist in the Winning of the American West;* G. Hardin, *Population, Evolution, and Birth Control: A Collage of Controversial Ideas;* and W. Goldschmidt, *As You Sow.*

The Human Mind: Conceptual and Empirical Issues in Twentieth-Century Philosophy, Psychology, and Linguistics. In the history of thought, mental phenomena—perception, memory, deliberation, and the like—have often been treated as events occurring "in the mind," with the mind taken as distinct from the body, indeed a unique kind of thing in the universe. The twentieth century has seen many challenges to this view. Some have denied the existence of the mind; others have identified it with the brain. Many psychologists have held that whether or not there is such a thing, it cannot be investigated scientifically, and have concluded that psychology should devote all its attention to behavior. Still others have granted that we can speak of a human mind, but have maintained that it is not different in kind from the minds of animals or even the minds of computers. This course surveys several twentieth-century theories of the mind as they have developed in

philosophy, psychology, and linguistics. The theoretical ramifications of recent empirical discoveries such as the bilateral nature of the brain and the linguistic abilities of apes are considered. The goal throughout is to understand better the nature of mental phenomena and the place of the mind in an adequate account of human beings.

Evaluation includes a midterm examination and a term paper. Readings include S. Freud, *New Introductory Lectures on Psychoanalysis;* B. F. Skinner, *About Behaviorism;* G. Ryle, *The Concept of Mind;* J. Lilly, *The Mind of the Dolphin;* and N. Chomsky, *Language and Mind.*

Broadmindedness is the result of flattening high-mindedness out.

attributed to George Saintsbury 1895-1933, English literary critic and historian

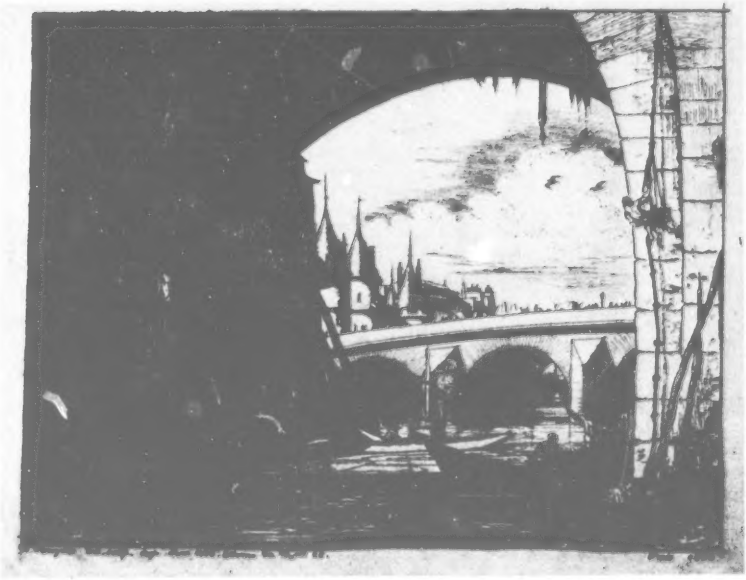
The Global Political Agenda. Issues of public policy do not respect the neat boundaries of disciplines as defined by the academic world. Critical policy issues typically exhibit important economic, moral, political, and sociological aspects; they frequently raise quesions that have ecological and technical dimensions; and they are always rooted in history. The objective of this course is to challenge students to apply their training in the social and, to some extent, the natural sciences to the understanding of political issues that confront Americans in an increasingly interdependent world. Two major policy areas are considered: international security and international inequality.

Students write three position papers and present one of them orally. Works for study include *Five Minutes to Midnight,* a film; *North-South: A Program for Survival;* R. Reagan, "Opening Statement at Cancun Summit"; R. Moss, "Let's Look Out for Number 1"; J. Stalin, "The Hostile Anglo-American Alliance"; W. Churchill, "The Iron Curtain Dropped by Russia"; J. Schell, *The Fate of the Earth;* G. Kennan, "How to Break the Nuclear Impasse"; and W. Leontief, "The World Economy in the Year 2000."

Computers for Qualitative Research. The computer is often regarded as a tool for quantitative research only. In fact, computers have many qualitative applications. In addition to word processing, they can build concordances for the study of imagery in Shakespeare, investigate the influence of Milton on Shelley, determine associations between producers and actors in the motion picture industry, and so on. The possibilities are limited only to one's imagination, once the basic computer techniques are understood. In this course, students learn enough computer methodology to undertake computer

analyses of textual material in their *own* areas of interest. Specifically, the course instructs in three computer procedures: (1) file creation and management in the ONLINE mode using the EDITOR program; (2) use of a word processing system to write papers for the course; and (3) use of the RIQS program—which can handle all the examples above—for the analysis of textual material chosen by the student.

The course is taught using a terminal connected to Vogelback Computing Center and four large-screen monitors for display. A midterm examination tests understanding of basic computer commands. Students use the computer to write a major paper reporting the results of the computer analysis of textual material. There are readings about computer hardware and software, and students consult manuals, some prepared at Vogelback, about the programs that are used.



Charles Meryon, French, 1821-68, *L'arche du Pont Notre-Dame, Paris*, etching (courtesy of the Art Institute of Chicago)

Linkage Seminars

The great difficulty in education is to get experience out of ideas.

George Santayana,
1863-1952,
American poet and philosopher

Linkage Seminars are small courses taught by accomplished nonacademics who have an affinity for the liberal arts and sciences and a gift for intellectual inquiry. These courses link liberal education to substantial public and professional issues, in an attempt to determine how theory and practice affect and enrich one another. As part of their departure from the traditional college course, Linkage Seminars sometimes meet in the instructor's workplace, such as the Art Institute.

While these seminars can focus the transition from the academic to the nonacademic world, they should not be considered preprofessional training programs. Their primary concern is not narrow careerism but the abiding value of relating the liberal arts and sciences to important social and professional concerns, partly through exploring forms of work.

A Linkage Seminar is occasionally repeated in a subsequent quarter, but is generally offered one time only. Enrollment is limited to 15.

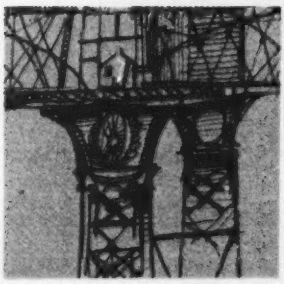
The Romans taught their children nothing that was to be learned sitting.

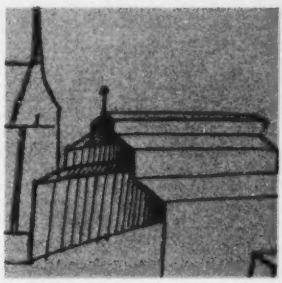
Seneca, c 4 B.C.-A.D. 65. Roman statesman and philosopher

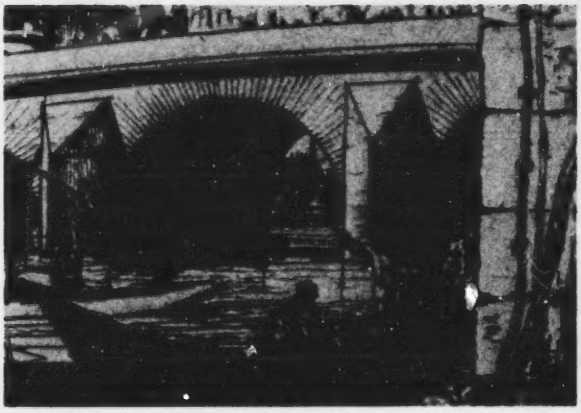
Play Writing and Production in Cross-Cultural Perspective. Uwa Hunwick, a leading Nigerian playwright, director, and producer, analyzes her plays and the problems of adapting them to various cultural contexts. Selected examples illustrate practical problems of writing and of moving plays from draft to production and performance. Problems of production in Africa, Latin America, and the United Staes are discussed, especially those associated with *Ogbanje*, *A Step in the Dark*, and *The Silent Ones*.

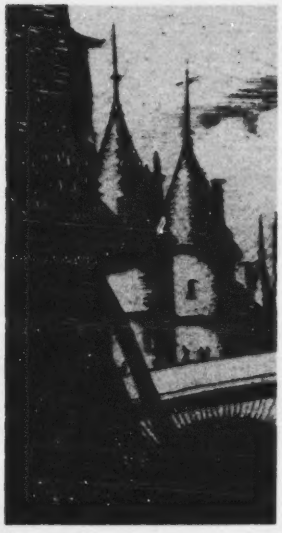
The Interrelation of the Media in French Art. In France during the last half of the nineteenth century, photography and printmaking developed rapidly, and profoundly influenced the evolution of easel painting. An examination of this interaction is conducted at the Art Institute by Richard Brettell, Curator of Modern European Painting, and Suzanne McCullagh, Assistant Curator of Prints and Drawings. Students use the Institute's collections as sources for the documents to be examined.

Biotechnology and Patent Law. This seminar explores the place and function of patents and patent law in contemporary biotechnology. Robert Benson, Director of the Biotechnology Patent Program for G.D. Searle & Company, uses actual cases to explain the legal and biotechnological issues involved. Topics include patents and the concept of intellectual property, the ethical aspects of genetic engineering, and national and international regulation of biotechnology. A background in chemistry and biology is recommended.









Modes of Professional Writing. Taught by Rick Telander, a writer for *Sports Illustrated* and author of *Heaven Is a Playground*, this course considers various modes of professional writing for their intellectual challenge and market potential. Professional writings can contain implications larger than their immediate occasion or subject, and thus may interest a general audience. Readings such as L. Thomas, *The Medusa and the Snail*; G. Orwell, *A Collection of Essays*; L. Gardner, *Fat City*; and *Heaven Is a Playground* serve as models. Students write a number of essays, ranging from expository reporting to autobiography; Mr. Telander offers advice about writing for specific professional uses. The practical orientation of this course differentiates it from other writing courses in the College.

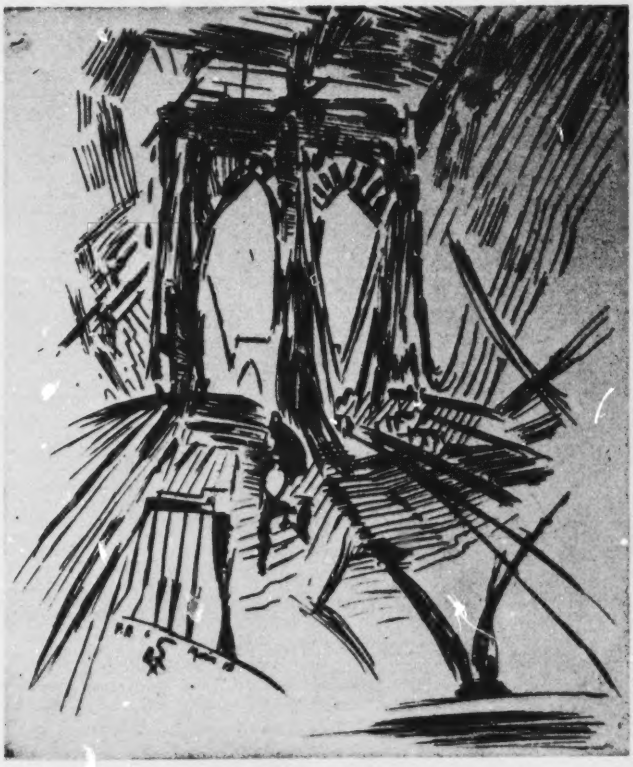
State and Conscience: Current Social Issues in the Context of Religious Traditions. This course, taught by David Polish, Founding Rabbi of Beth Emet The Free Synagogue and author of *The Eternal Dissent* and *The Higher Freedom*, examines Jewish and Christian attitudes toward political power and statehood against the background of contemporary political, social, and economic realities. Also studied are the positions that Judaism and Christianity take about such issues as the separation of state and church, the notion of just war, nuclear rearmament, abortion, and capital punishment. Readings include selections from Maimonides, Abravanel, Kaufman, Federbush, Gavin, Parker, Ehler, Augustine, Aquinas, and Luther.

Other Opportunities for Scientific and Scholarly Research

We submit to the society of those that can inform us, but we seek the society of those whom we can inform.

Charles C. Colton, 1780-1832. English poet and essayist

Relatively few academic institutions undertake both the teaching and the advancement of knowledge. A strong commitment to education and to scholarly research helps give Northwestern its distinctive character. The University trains students in a discipline and also encourages and guides young scholars who aspire to help solve current research problems. Most departments in the College of Arts and Sciences offer seniors the opportunity to do independent scholarly work outside the usual classroom or laboratory, in either Independent Study, Senior Seminars, or the Combined Degree Program. Also available to seniors are Honors study and Certificate Programs.



John Marin, American, 1870-1953, *Brooklyn Bridge No. 6*, etching (courtesy of the Art Institute of Chicago)

The roots of education are bitter, but the fruit is sweet.

Aristotle, 384-322 B.C., Greek philosopher

Independent Study

Seniors can enroll in C99 Independent Study and receive course credit for working alone on a research project under the supervision of a faculty member. They can become involved in experiments, outside reading, or other scholarly pursuits—all designed to add understanding of their culture and the world around them. Seniors who undertake Independent Study interact on a one-to-one basis with the faculty, much as graduate students and postdoctoral students do.

Senior Seminars

Although the exact format of Senior Seminars varies from one department to another, all are designed to encourage far-reaching independent reading and writing with the active guidance of a faculty member. Students meet regularly in small groups to present their work and to evaluate each other's progress. The culmination is usually an extensive scholarly research paper.

Combined Degree Program

The Combined Degree Program enables exceptional undergraduate students to earn both a bachelor's and a master's degree in four years. A junior with an outstanding academic record is selected (or can ask to be selected) by a department, which recommends him or her for admission to the Graduate School. Students in this program can apply certain credits toward both the bachelor's and the master's degree. They engage in independent research or scholarship during their senior year and receive their master's degree following the successful completion of a thesis or examination.

Honors Study

Honors study for seniors of exceptional academic ability provides the opportunity to do research that is both integrative and pathfinding. Students in Honors seminars acquaint themselves with central questions and methodological concerns of their discipline and also follow the research of their classmates.

Certificate Programs

Seniors may earn certificates recognizing work accomplished in a particular field. Like the other programs for seniors, Certificate Programs often develop interdisciplinary seminars. At present, the College offers Certificate Programs in African Studies, Asian Studies, Science in Human Culture, and Women's Studies.

Whatsoever things are true,
whatsoever things are honest,
whatsoever things are just,
whatsoever things are pure,
whatsoever things are lovely,
whatsoever things are of good report;
if there be any virtue,
and if there be any praise,
think on these things.

Philippians 4:8

Northwestern University reserves the right to change without notice any statement in this booklet concerning, but not limited to, rules, policies, tuition, fees, curricula, and courses.

It is the policy of Northwestern University not to discriminate against any individual on the basis of race, color, religion, national origin, sex, age or handicap in matters of admissions, employment, housing or services, or in the educational programs or activities that it operates, in accordance with civil rights legislation.

Any alleged violations of this policy or questions regarding the law with respect to nondiscrimination should be directed to: Raymond W. Mack, Provost, Rebecca Crown Center, Evanston, Illinois 60201, phone (312) 492-5117; Garrison M. Hickman, Equal Opportunity Officer and Handicapped Services Coordinator, 720 University Place, Evanston, Illinois 60201, phone (312) 492-7458.

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